NARRAGANSETT BAY PROJECT

HEARING

BEFORE THE

SUBCOMMITTEE ON
OVERSIGHT AND INVESTIGATIONS

OF THE

COMMITTEE ON
MERCHANT MARINE AND FISHERIES
HOUSE OF REPRESENTATIVES

ONE HUNDRED FIRST CONGRESS

FIRST SESSION

ON

THE NARRAGANSETT BAY PROJECT OF THE NATIONAL ESTUARY PROGRAM, HOW THE COMPREHENSIVE CONSERVATION AND MANAGEMENT PLAN WILL BE IMPLEMENTED, AND WHAT ROLES EACH LEVEL OF GOVERNMENT WILL PLAY

JULY 31, 1989—NEWPORT, RI

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CONTENTS

	Page
Hearing held July 31, 1989, Newport, RI	1
Statement of:	
Bendick, Robert, Director, Rhode Island Department of Environmental Protection	27
Prepared statement	119
Cherkasky, Mara, Rhode Island League of Cities and Towns	47
Prepared statement	150
Coxe, Trudy, Executive Director, Save The Bay	42
Prepared statement	141
Davis, Hon. Robert W., a U.S. Representative from Michigan	6
Desrosiers, Holly, Rhode Island Marine Trade Association	45
Prepared statement	145
DeVillars, John P., Secretary of the Executive Office of Environmental Affairs, State of Massachusetts (prepared statement)	129
Foglietta, Hon. Thomas M., a U.S. Representative from Pennsylvania, and Chairman, Subcommittee on Oversight and Investigations	1
Fugate, Grover, Executive Director, Coastal Resources Management Council	32
Prepared statement	134
Goss, Hon. Porter J., a U.S. Representative from Florida	7
Karp, Caroline, Project Manager, Narragansett Bay Project	25
Prepared statement	93
Keough, Paul G., Deputy Regional Administrator—Region I, U.S. Environmental Protection Agency	13
Prepared statement	84
Machtley, Hon. Ronald K., a U.S. Representative from Rhode Island	8
Pederson, Dr. Judith, Bay's Program Coordinator, Office of Coastal Zone Management, Massachusetts Department of Environmental Affairs	30
Saxton, Hon. Jim, a U.S. Representative from New Jersey	5
Schneider, Hon. Claudine, a U.S. Representative from Rhode Island	2
Sherman, Dr. Kenneth, National Oceanic and Atmospheric Administration	9
Tippie, Virginia, Director, Estuarine Programs Office, National Oceanic and Atmospheric Administration	9
Prepared statement	68
Additional material supplied:	
Karp, C.A.:	
Annoted bibliography of Narragansett Bay Project—funded studies (1985-88)	112
Narragansett Bay Fact Sheet	111
Outline of Narragansett Bay Project "Comprehensive Conservation and Management Plan"	110
Communications submitted:	
Foglietta, Hon. Thomas M.: Memorandum of July 25, 1989, to Committee Members on field hearing in Newport, RI	56

NARRAGANSETT BAY PROGRAM

MONDAY, JULY 31, 1989

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS,
COMMITTEE ON MERCHANT MARINE AND FISHERIES,
Newport, RI

The Subcommittee met, pursuant to notice, at 9:10 a.m., in The Great Hall, Salve Regina College, Newport, Rhode Island, Hon. Thomas M. Foglietta (Chairman of the Subcommittee) presiding.

Members present: Representatives Foglietta, Hertel, Schneider, Saxton, Davis, Goss, and Machtley.

Staff present: Phillip Rotondi, Peter Marx, Chris Dollase, Mike Haas, and Brook Ball.

STATEMENT OF HON. THOMAS M. FOGLIETTA, A U.S. REPRESENTATIVE FROM PENNSYLVANIA, AND CHAIRMAN, SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

Mr. FOGLIETTA. The Committee of the Merchant Marine and Fisheries Committee of the Congress of the United States of America will come to order.

I greet you this morning and before we begin this hearing, I would like to thank our gracious host, Salve Regina College, for making this wonderful facility available to us.

In fact, considering the amount of work this Committee has to do, I want to announce that this is only our first meeting—we will be meeting here in this room in Newport every Monday morning for the next six weeks.

[Laughter.]

Mr. FOGLIETTA. I want to thank our witnesses for giving us their time on this very important issue: the future of our nation's estuaries.

I would like to announce that we will adhere strictly to the five-minute rule for Members' opening statements, witnesses' summaries of their testimony, and questions. With votes scheduled on the House Floor back in Washington this afternoon, we will have to proceed expeditiously as possibly so that we can conclude this hearing promptly at noon.

The National Estuary Program and the Narragansett Bay Project, in particular, are at important stages in their implementation, and it is important that we get today's testimony onto the record.

The Subcommittee meets today at the invitation of the Subcommittee's ranking Minority Member, Congresswoman Claudine

Schneider, to receive the testimony on the Narragansett Bay Project of the National Estuary Program.

Estuaries are resources of the greatest significance to this nation. Aesthetically beautiful, biologically productive, and ecologically essential, they provide food, jobs, transportation, and recreation to millions each year. However, despite their importance to the development and economic growth in the history of our coastal communities, we have too often treated them as dumping grounds.

After a century of over-use and abuse, our estuaries have been devastated, and with population trends suggesting an increasing number of people moving to coastal areas, the prospects for our estuaries continue to diminish.

It was with these issues in mind that Congress in 1987 created the National Estuary Program. An important aspect of this program is for each estuary project to develop a comprehensive conservation and management plan over a five- year period. As these individual projects reached the end of their five-year planning period, the National Estuary Program reaches a critical stage.

The questions we address today concern the transition of the National Estuary Program from the planning to the implementation process. As the Narragansett Bay Project nears its December 1990 planning benchmark, how will it get from the drawing board to reality?

Specifically, the Subcommittee wants to know how the comprehensive conservation and management plan will be implemented. What will be the roles of the Federal, State and local agencies in this implementation?

The bottom line is simple: will this unique Federal, State and local partnership work?

Mr. FOGLIETTA. I would like to now recognize the distinguished Ranking Minority Member of this Subcommittee, Claudine Schneider of Rhode Island's second congressional district. Ms. Schneider has been very active in National Estuary Program issues both here in Rhode Island and in Washington.

It was Ms. Schneider who requested that the Subcommittee hold this hearing today.

Congresswoman.

STATEMENT OF HON. CLAUDINE SCHNEIDER, A U.S. REPRESENTATIVE FROM RHODE ISLAND

Ms. SCHNEIDER. Thank you very much, Mr. Chairman, and I would like to publicly thank you for agreeing to hold this hearing today in Rhode Island.

We also appreciate that so many of my colleagues had agreed to come to this hearing and participate in the discussion about the successes of Narragansett Bay.

I would like to point out that Narragansett Bay was one of the four original estuaries that was selected throughout the United States to become part of the National Estuary Program, and in 1987, the Merchant Marine and Fisheries Committee, our Committee, led the efforts in the House of Representatives to formalize the National Estuary Program and to make its status permanent by including it in the reauthorization of the Clean Water Act.

This action also established that it is the policy of the United States to maintain the ecological integrity of the nation's estuaries through long-term planning and management, and then, more recently, on March 11th of 1988, I was proud to take part in the ceremony which officially made Narragansett Bay an estuary of national significance, and it was formally included in the National Estuary Program.

I would like to point out that as many of you know, just three short weeks ago, I held a hearing of the Subcommittee on Oceanography in this same room, concerning the effects of the World Prodigy oil spill on the bay, and like all Rhode Islanders, I was incensed that such an inexcusable disaster could happen in our own backyard.

There is, however, great irony to this concerning the oil spill because for several weeks, the entire nation was focusing on the disaster at Narragansett Bay, because 400,000 gallons of oil spilled into our waters and attracted national attention, but the irony is that absolutely every year, nearly one million gallons of oil finds its way into Narragansett Bay from urban runoff, from waste oil that is dumped into the sewers, from combined sewer overflow or small spills and a variety of other sources.

This, regrettably, is one of the main problems that is facing the bay and the project. Believe it or not, my colleagues, I would like to bring to your attention that the bay is the very heart and soul of Rhode Island and that sixty-five percent of our population live within five miles of the bay.

So, our desire to be close to the bay, regrettably, has also had some adverse effects on the bay itself. The residential and commercial development along our shoreline has increased pollution and has caused public access to the shoreline to be diminished.

There are also many Rhode Islanders who earn a living on the bay. Our 3,200 quahoggers that harvest $17 million worth of the nation's finest hardshell clams, which some of you had the opportunity to savor last night, are directly affected by the quality of the bay's water.

Every time we have more than a half an inch of rain in a twenty-four hour period, twelve percent of our bay's shellfish beds are closed. An additional 20 percent of the bay is already closed to shellfishing, and probably most Rhode Islanders are not even aware of the fact that Rhode Island and Narragansett Bay were once known for its vast beds of oysters and that Greenwich Bay had the most productive scallop beds in the State. They are both now long gone. We cannot allow the quahog beds to succumb to the same fate.

Recreation is also a key centerpiece of Rhode Island's billion dollar tourist industry. On a typical summery day, we have 32,000 people come from out of the State to visit the bay, and there are 20,000 to 30,000 boats on the bay. Rhode Islanders are also fanatics about playing on the bay themselves. It is the home to nearly a hundred marinas and a third of all Rhode Islanders go boating on the bay every year.

Then, too, through the efforts of Congress, the State of Rhode Island and the Narragansett Bay Project, the quality of the bay has

actually improved over the last decade, but there are still many problems that need to be addressed and corrected.

In the past decade, industrial waste discharges have been reduced by nearly half. The discharge of metals has been cut by seventy percent. However, there are still 145 industries and twenty-nine municipalities which discharge their waste into the bay or its tributaries.

There is much that can be done on both the Federal and State level, and on June 14th, I introduced the Coastal Defense Initiative along with my colleagues Gerry Studds and Jim Saxton, whom we have here today, from New Jersey.

This legislation is a comprehensive attack on coastal pollution because it will strengthen the Federal coastal water standards. It would amend the Coastal Zone Management Act to allow State planning agencies, such as the Coastal Resources Management Council, to address pollution abatement, water quality, and the loss of fisheries habitat rather than just planning coastal development.

It would also improve monitoring and create a $200 million a year Coastal Defense Fund to finance State and local water quality improvement efforts.

Two weeks ago, I introduced the Narragansett Bay Protection Act, which also establishes strict Federal pilot requirements for all oil tankers entering Narragansett Bay and Block Island Sound. This bill would prevent the type of disaster caused by the World Prodigy, and then, finally, one of the best ways to cut back pollution in Narragansett Bay is to reduce the amount of waste that we generated and to recycle as much of that waste as we possibly can.

Fortunately, our State, one of five, has led the nation in recycling. I have introduced two bills, the Hazardous Waste Reduction Act and the Solid Waste Prevention Act, which together form a comprehensive approach to reducing and recycling the waste we generate, rather than dumping them into our coastal waters.

I very much look forward to hearing from our distinguished witnesses today. It is the Committee's intent to learn about the progress of the Narragansett Bay Project and to determine its direction in the future. It is also important that we all be aware of the successes of this project and some of the impediments that we do face. I happen to be one who likes to know the answers to questions often times before I ask them, and I think that when we are asked about the successes of Narragansett Bay we will find that there are many. It is my hope that we will be able to use these successes as a national model so that my colleagues, who are gathered here, who all represent significant coastal areas, will be able to use this information to help move us more rapidly toward a national estuarine prevention policy.

Thank you very much, Mr. Chairman.

Mr. FOGLIETTA. Thank you, Claudine.

I recognize the distinguished Member from Michigan's fourteenth district, Dennis Hertel.

It is a pleasure to have Congressman Hertel here with us today. He is the very able Chairman of the Oceanography and Great Lakes Subcommittee, a new name which he is responsible for.

It is Congressman Hertel's Subcommittee under whose legislative jurisdiction the National Estuary Program partially falls.

Congressman Hertel.

Mr. HERTEL. Mr. Chairman, I want to thank you and Ms. Schneider for holding this hearing.

Our Subcommittee is very interested in it. I have no opening statement, but I appreciate very much your being here today.

Mr. FOGLIETTA. Thank you.

It is an honor to have the able gentleman from New Jersey's thirteenth congressional district, Congressman Jim Saxton.

STATEMENT OF HON. JIM SAXTON, A U.S. REPRESENTATIVE FROM NEW JERSEY

Mr. SAXTON. Mr. Chairman, thank you very much.

It is, indeed, a pleasure to be here from New Jersey to join all of you this morning in learning about the successes of the Narragansett Bay and the plans for future successes.

Let me just say this: I want to thank very much Ms. Schneider for inviting us to Rhode Island today, and I would like to thank the Chairman for taking on something. I was very thankful that Claudine invited us here, and I was very thankful that Ron Machtley invited us to his home. I was not aware until the Chairman told us this was not your home, Ron. Somebody said all Rhode Islanders live this way, but we do appreciate very much being here.

You know, I got elected to the Congress in 1984, and since that time, I have been very much involved with the ocean environment, with estuarine problems and estuarine progress, and, yesterday, the airplane stopped in New Jersey to pick me up at McGuire Air Force Base, and as we took off, we flew over the body of water that I played on, Barnagut Bay, and obviously one that I am very much involved with as well, like Claudine and Ron are with this bay, and I was sitting in the airplane by Claudine and I got all excited.

I said, "This is my chance to tell Claudine about Barnagut Bay, the problems that we have." And we discovered that many of the things, in fact, almost all of the things that are problems with Narragansett Bay are also problems with Barnagut Bay, and so it goes throughout the coastal United States.

Whether we talk about the project we have got going similar to this one, the Chesapeake Bay Ms. Tippie has been so much involved in, or whether it is Narragansett Bay or Barnagut Bay, we have problems in common that we all have to deal with in common.

It was in 1984 that one person began to draw these concerns to my attention. I happen to have gotten elected to Congress that year in November to replace, frankly, the ranking Member, the ranking Republican Member of this Committee. His name was Ed Forsythe.

And as I got onto an elevator to go somewhere, I ran into a lady who stuck her hand out and said, "Hi. I'm Claudine Schneider. Who are you?" I said, "Well, I'm Jim Saxton." We explained to each other who we were and what we were doing, and she said, "You won't believe this, but I'm on my way to the first meeting to carry out a law sponsored by your predecessor."

It was Ed Forsythe who had sponsored the bill creating the Year of the Ocean in 1985, and Claudine had—if I had not run into Claudine that day in the elevator, I probably would not have been so

much involved in that, but it was Claudine who began to introduce me to all of this, and, frankly, I owe a lot of the awareness that I have to what has gone on with regard to estuarine and ocean problems to Claudine Schneider, and I want you to know that.

I also would like to say what a great guy we have got in Congress, who got elected in 1988, in the way of Ron Machtley. Ron is a Member of the Armed Services Committee and the Small Business Committee and has done a great deal to enhance the situation in Newport and his district with regard to those two subjects as well.

The ocean and estuaries around our coasts are so very important to all of us, and the challenges that we face are brought to light almost every day. Throughout the summer in New Jersey, you cannot pick up a newspaper without reading about some new challenge that we have. Sometimes they are bold challenges, and sometimes we read about the progress that we have with regard to those challenges, and I know you have the same thing here.

The near catastrophe that you had with the oil spill recently. This morning, I picked up the New York Times and I am reading about a situation on Cape Code. The headline is "Beach Drivers Claim Victory in Cape Cod Battle". Obviously, there was a conflict there between the environmental community and fishermen, which we are going to try to obviously help work out long-term, and as we go around the coastal part of the United States and the Great Lakes in Michigan, where two of our colleagues are from this morning, we face these kinds of situations that we are very much concerned about.

What we hope to do today is to learn from the situation in Narragansett Bay and the progress that you have begun and the study that will point out the future challenges with regard to what we need to accomplish here in Rhode Island.

I look forward to hearing from the witnesses this morning and beyond that to work with your two very fine representatives in meeting those challenges.

Thank you.

Mr. FOGLIETTA. It is an honor this morning to have here with the Subcommittee on Oversight and Investigations the Ranking Member of the Full Merchant Marine and Fisheries Committee, the very able gentleman from Michigan's eleventh congressional district, Bob Davis.

Thank you for joining us, Bob.

STATEMENT OF HON. ROBERT W. DAVIS, A U.S. REPRESENTATIVE FROM MICHIGAN

Mr. DAVIS. Thank you, Mr. Chairman, for that.

I appreciate the opportunity to be here. Frankly, this is my first trip to Rhode Island, and I am very impressed.

I might say that I am just very pleased with the work, Mr. Chairman, that you and Claudine Schneider, as the ranking Member of this Subcommittee, are doing. The Oversight and Investigations Subcommittee of any major committee can be one of the most important committees that we have, and you have been the most

active Members of this Subcommittee since all my years of serving, eleven years now, on this full Committee.

There are many issues that you have become involved in, very important issues, that probably other subcommittees could have or should have looked at and have not looked at. So, I congratulate you, Mr. Chairman, for doing an excellent job with Claudine Schneider.

Ron Machtley, Claudine and Jim Saxton, of course, who represent the coastal areas, have been, and I'm sure are going to continue, trying to protect the environment which is so important to you folks here, and I just want to say that I appreciate the opportunity to be here, to listen to the testimony, hopefully be able to help preserve these very valuable areas of our country.

Thank you, Mr. Chairman.

Mr. FOGLIETTA. I thank you.

Joining us today from Florida's thirteenth congressional district, Congressman Porter Goss, who is very interested in the estuary program.

Tampa Bay, his home area, is being considered for inclusion in the program.

Mr. Goss?

STATEMENT OF HON. PORTER J. GOSS, A U.S. REPRESENTATIVE FROM FLORIDA

Mr. Goss. Thank you very much, Mr. Chairman.

Actually, my home is in Sanibel, and part of the district includes Sarasota Bay, which is in the project, one of the six, seven, eight, however many we are up to now, and one of the recent ones, and my interest today in part is seeing how this project, which is about three and a half years ahead of us, is managing the transition from the research and analysis and inventorying of the situation into the management side, and I think that is going to be the tough part of this program.

I would like to thank you, Mr. Chairman, for your wisdom and foresight in taking this Committee effort out into the field. I would certainly like to thank Congresswoman Schneider for not only her part in this today, but for her long work on behalf of the waters and the environment, the quality of life in Rhode Island.

I have known of her and her work for many years because, on a more personal note, I have been a summer resident of Rhode Island for many years, and, in fact, my family still come here, some of my family are still here. In fact, my mother is just across the bay this morning. And, so, it is very important to us to see that the trend is reversed because as a child here growing up and learning how to body surf and swim and do all those things, I can tell you now at my advanced age, some fifty years later, that things have deteriorated, and I am glad to hear that they are coming back a little bit through the efforts of this project and efforts of people like Claudine, and I think that is very good news.

I am also very happy to have gotten to know as a co-freshman Congressman Ron Machtley, who is a fabulous guy, and something you may not know, he is probably one of the great candidates for the Olympics in wind surfing that you all have hidden. I do not

know why you have kept his talent so hidden, but he is really good. He will probably tell us something about it before we are through.

I, too, am a wind surfer, and I do not like to wind surf in polluted waters any more than he does. So, I have another little personal interest there.

But I thank you very much for your interest in this this morning, and, Mr. Chairman, I thank you for including me in the program.

Mr. FOGLIETTA. Thank you.

Joining us today, too, even though he is not a Member of the Merchant Marine and Fisheries Committee, is the congressman from this particular district, Ron Machtley, of Rhode Island's first congressional district.

Congressman Machtley serves with me on the Armed Services Committee.

Ron, we welcome you to this hearing, and we thank you for allowing us to be up here in your district and to thank you again for your hospitality while we are here in Newport.

Any opening remarks? We would be happy to hear from you.

STATEMENT OF HON. RONALD K. MACHTLEY, A U.S. REPRESENTATIVE FROM RHODE ISLAND

Mr. MACHTLEY. Thank you, Mr. Chairman.

I would like to welcome you as was indicated earlier to my home, just to tell you that I think it is wonderful that the Committee at the suggestion of Congresswoman Schneider has moved from Washington to the local scene to see, physically see, the estuary and to hear the local witnesses.

It is so easy, as I have learned in Washington, to get a perspective based on only testimony that may or may not be true, and there is no replacement for firsthand observation, and I think as you all have observed, as we look at this door, I think God had a special liking for this area because He certainly richly blessed it, the creation of this magnificent body of water, which people from centuries, through the centuries have come to enjoy, and to earn a living from, and on top of, and there is, unfortunately, no way to reclaim it once we lose it.

It will be gone forever, and, so, as we begin to look to the future, nothing is more important than trying to make certain that we preserve our environment, and here in Rhode Island, we have been so fortunate that we have had perhaps to my observation the very best coordination between the Federal, the State, and the citizens. We have a group who will be here testifying later called Save The Bay, and they have been at the forefront over the years in making sure that where there is a gap between Federal and State agencies, that the citizens are maintaining and protecting the waters.

So, as we listen to the testimony, I hope that not only will you hear the words, but you will savor the view and the beauty of this natural resource so that when we are back in Washington, that the legislation will preserve the pristine magnificent natural resource which we have, and I commend you, Mr. Chairman, for having this hearing, and thank you for your efforts and all that you have done.

Mr. FOGLIETTA. Thank you, Ron.

We will now announce our first panel of witnesses. Mr. Paul Keough, who is the Deputy Administrator of Region I of the United States Environmental Protection Agency.

Mr. Keough is accompanied by Ms. Katrina Kipp. You might wonder why I put the gentleman before the lady. The reason for that is that the lady is going to be introduced by Congresswoman Schneider.

Ms. SCHNEIDER. I would like to take this opportunity to welcome a new designate for the national responsibility of being the Assistant Administrator for Ocean Services and Coastal Zone Management, Ms. Virginia Tippie, who has been a long time friend of mine, and, more importantly, probably one of the more exceptional women within the scientific discipline, and the fact that we are honored to have you, Virginia, represent not only our State but the nation in terms of ocean services and also coastal zone management programs is, indeed, a great honor.

I would like to point out that in 1974 through 1976, Virginia was the coordinator of the Marine Affairs Program at the University of Rhode Island. She had also served as special assistant to the chairman for the National Advisory Committee on the Oceans and Atmosphere, and in 1976 to 1981, she was the executive director of the Center for Ocean Management Studies at the University of Rhode Island, and then, moving on to national fame, from 1981 to 1984, she was the director of the Environmental Protection Agency's Chesapeake Bay Program, a program comparable to our own Narragansett Bay Program.

She has also served as the technical director for that program and, more recently, from 1986 to 1989, has served as the director of the NOAA Estuarine Program Office, and, so, Virginia, we are delighted to welcome you here today in your official new capacity, and let me say that I for one, and I believe the entire State of Rhode Island, is very proud of you and look forward to the leadership that you will provide on a national level to maintain quality of life for our oceans and to enable the Coastal Zone Management Program, the Sea Grant Program and the numerous other programs, that our State particularly has invested in, to surge ahead and, once again, provide a national model.

Mr. FOGLIETTA. Thank you, Congresswoman.

I would like to announce also that Dr. Kenneth Sherman is accompanying Ms. Tippie.

Virginia, let us start off with you. I just want to remind you that we are working with the five-minute rule. Your full written statement will be entered into the record. Without objections, so ordered.

STATEMENT OF VIRGINIA TIPPIE, DIRECTOR, ESTUARINE PROGRAMS OFFICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, ACCOMPANIED BY DR. KENNETH SHERMAN

Ms. TIPPIE. Thank you, Mr. Chairman.

It is a pleasure to appear before you today on behalf of the National Oceanic and Atmospheric Administration to discuss the Narragansett Bay Project. I have asked Dr. Kenneth Sherman to join

me here at the table. He is the Director of our Narragansett Bay Lab.

Mr. Chairman, let me begin by stating what a pleasure it is for me to be back in the Ocean State. You know, I lived in Rhode Island for ten years, and I have very fond memories of the State's lovely coastal waters. As an avid sailor and a coastal oceanographer, I am intimately acquainted with Narragansett Bay.

In fact, Congresswoman Schneider and myself drafted the very first Coastal Zone Management Plan for Rhode Island while we were working at the Coastal Resources Center at the University of Rhode Island, and the procedures that were established by Congresswoman Schneider for coordinating our coastal program with the other Federal agencies became the national model for all the other States to follow.

Additionally, my experience as Director of the Chesapeake Bay Program, which has been the model for this National Estuary Program effort, provided me with the very firsthand knowledge of some of the problems involved in getting a program underway.

I would like to start out, though, by clarifying that NOAA has a longstanding commitment to Narragansett Bay, not just the Narragansett Bay Project by EPA, but, in fact, NOAA has been charting the bay for over 100 years, and in 1990, we will be spending over $1 million to rechart the bay.

These charts are very valuable, obviously, to a range of users. In fact, on the easel, as you can see, I have a poster developed by the Rhode Island Sea Grant Program that was developed by a computer using our barometric data, and I have those posters available for all of the representatives.

These posters are, in fact, interesting. We can see from that poster the deep blue indicates a deep channel of the east package, which goes right past the Newport waterfront area, but these products are very, very valuable for a range of users and, of course, we have been doing it for over a hundred years.

Also, for almost twenty years, our Sea Grant Program, our National Fisheries Service effort, the Narragansett Lab, and our Coastal Zone Program have been operating and funding a wide range of environmental efforts.

In the Coastal Zone Management Program alone, we spent $9 million to support wise management of coastal resources in the Narragansett Bay area.

With regard to EPA's Narragansett Bay Program, we are very optimistic that through aggressive Federal-State partnership efforts, we will be able to preserve the environmental quality of Narragansett Bay, and I would like to give some specific examples of how NOAA, through its on- going management, assessment and research activities, is supporting the Narragansett Bay Project.

First, in the management area, we, of course, administer the Coastal Zone Management Program, and the Rhode Island Coastal Zone Management Program has put forth a range of efforts to improve the ability of the State to manage its land and water activities.

An interesting example of one of their activities is the Salt Pond Watchers Program and the Special Area Management Plan, that was developed for the salt pond. This management plan is a good

example that should be applied in other areas of the Narragansett Bay as well as used as a model nationwide.

Another example of our Coastal Zone Management Program is, in fact, some of the extensive efforts that we have done in the Estuarine Reserve Program. This Estuarine Reserve Program is a special program that sets aside areas of the bay for protection, and in 1980, NOAA designated Hope Island, Patience Island and the north end of Prudence Island as a reserve to be set aside for research and public education activity.

I would like to comment now about some of the assessment activities that we have underway, and I have some examples of the products and results of our assessment activities in the blue folder in front of you.

One of those examples is the fat map of the Narragansett Bay wetlands area. This map is generated using, of course, computer-generated information, and we have an addition to wetlands information, we have also compiled information on the abundant life history information on very important fish and shellfish in Narragansett Bay.

Another example of an assessment activity we have underway is the National Status and Trends Program. This is our national coastal monitoring effort, and in Narragansett Bay, we, in fact, have a surveillance site and free mussel watch site, and these samples we collect, of course, mussel samples and sediment samples are analyzed for a range of various contaminants, and the results of those samples are in your folder.

We are also responsible for assessing the damage from oil spills. In fact, with the recent World Prodigy oil spill, we provided over five people on scene to help support the assessment effort. We provided graphic models to predict the movement of the oil spill while it was happening, and, of course, we identified sensitive environmental areas that should be protected against the spill, and, lastly, we recommended a range of protective measures and helped, of course, the State and the Coast Guard respond to the spill.

And in the final area of research, we have a range of activities, of course, starting with our Rhode Island Sea Grant Program and our National Estuarine Fisheries Service effort.

I think one exotic sighting example in the Rhode Island Sea Grant Program is, in fact, the Pond Watchers Program, and this Pond Watchers is a citizens volunteer program, where citizens monitor the effects of various contaminants on the water. That particular program, by the way, is now being used as a model nationwide and is being implemented in other areas of the Narragansett Bay.

Another exciting research effort that is underway is a new program that we have initiated with the University of Rhode Island and also, of course, with the Narragansett Bay Fisheries Lab, to really develop a Northeast Regional Center for Environmental Data.

A final note. I would like to talk about the inter- agency coordination efforts that we have underway between NOAA's Coastal Zone Program and the National Estuarine Program.

Recently, NOAA and EPA signed an MOU which identifies areas where integration of both programs can take place. An example of

this integration is that when the comprehensive management plan is completed by the Narragansett Bay Project, it will be included in our federally-approved Coastal Zone Program. That basically gives it some teeth, and it enables us to really enforce some of the recommendations that will come out of the Narragansett Bay Project plan.

In addition, I think it is very valuable that the Executive Director of Rhode Island's Coastal Zone Program is on the management committee for the bay effort, and, recently, we have been having a lot of interaction between, of course, the Federal offices as well as the State office for the Narragansett Bay Project.

I would like to offer a couple of final recommendations that I think are important in terms of making this effort work.

First, the CZMP was a management plan which is being developed by the Narragansett Bay Project. These should be completed as quickly as possible to provide us a basis to evaluate how effectively the plan will address the issues of improved water quality and living marine resources.

You need to get that draft out so that we can respond, so that we can provide input. Everybody needs a straw man.

And, secondly, the NOAA and EPA agreement should be implemented where the CZMP is completed. This means that that CZMP, that management plan, developed by the Narragansett Bay Project, should and must be included in the federally-approved Rhode Island Coastal Zone Program. Once again, that will give it teeth.

And, lastly, I urge that EPA and the Rhode Island Department of Environmental Management consider making the Rhode Island State Coastal Zone Program an equal partner on the Narragansett Bay policy committee, so that we can go forward with full implementation.

In concluding my testimony, I just want to reaffirm NOAA's commitment to maintaining and addressing the environmental quality of the bay, and I feel particularly confident in making this statement because thanks to the efforts of Congresswoman Schneider and other congressional leaders, Dr. John Knauss has been nominated for the Under Secretary of NOAA.

Dr. John Knauss was the Provost for Marine Affairs at the University of Rhode Island for many, many years, and at this very moment, Dr. Knauss is, in fact, testifying right now at a Senate confirmation hearing, and because of his firsthand knowledge of Rhode Island's environmental concerns, I know I speak for him in saying that the bay is a national resource, and it must be preserved, and we will do everything we can to assure that.

Thank you.

[The prepared statement of Ms. Tippie can be found at end of hearing.]

Mr. FOGLIETTA. I thank you, Ms. Tippie.

Now, we will hear from Mr. Keough.

STATEMENT OF PAUL G. KEOUGH, DEPUTY REGIONAL ADMINISTRATOR - REGION I, UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

Mr. KEOUGH. Thank you very much, Mr. Chairman.

It is a pleasure to be here.

I am the Deputy Regional Administrator for the New England Regional Office of EPA, and we are fortunate in having Claudine Schneider as one of our representatives in this region who has earned not only a State reputation or a New England-wide reputation, but a national reputation for working in the areas of coastal pollution prevention.

So, we are very pleased to participate in these hearings, and it is good to see Representative Schneider here.

Our estuaries and oceans are vital resources, providing habitat and marine resources, abundant fishing grounds, and significant recreational opportunities. However, the nation's coastal waters are facing many challenges.

Recent events, such as the World Prodigy oil spill, on June 23rd, in Narragansett Bay, the appearance of medical wastes in New England waters, and the closure of some of our beaches and shellfishing areas this summer because of pollution problems, are reminders of the on-going problems that are degrading our coastal environment.

With the majority of our nation's population living within an hour's drive of the coastline, including the Great Lakes, the nature of these problems is considerable. An increasing amount of attention is being paid to the coastal environment by Congress. A number of measures have been introduced by State legislators, by governors, like Governor DiPrete of Rhode Island, and by EPA.

The EPA has undertaken a number of initiatives in the last few months. Our Administrator Bill Reilly, for example, is in the process of working with other agencies, such as NOAA, the Coast Guard and the Department of the Interior, to develop a coherent national ocean protection policy.

Mr. Chairman, you talked about the designations of estuaries under the Clean Water Act and you talked about the National Estuary Program. Region I was fortunate in having three of the original estuaries that were designated. Narragansett Bay, Buzzards Bay, and Long Island Sound. Another estuary Puget Sound was also originally designated.

We have been working at this now for several years. EPA intends to transfer the technology and the lessons that we have learned so far from the National Estuary Program to other estuaries and coastal waters, and the following discussion will highlight some of the noteworthy features and many successes of the Narragansett Bay Project.

It should be noted that many of these features are characteristics of all NEP programs. The Narragansett Bay Project has taken an innovative approach to solving pollution problems. Rather than the traditional source-by- source approach, the Narragansett Project is taking a basin-wide, cross-media approach to environmental management and pollution control.

Developing an integrated regulatory response that evaluates all the pollution issues that simultaneously enables us to put the problems in priority on a regional watershed basis, allowing the maximum benefit from available funds.

Through the NEP, a framework has been established for EPA, local and State governments, and other Federal agencies to work together to address coastal problems in an integrated multi-media fashion. The emphasis will be on cleaning up existing pollution problems as well as implementing pollution prevention measures.

The close cooperation and collaboration between regulatory agencies at the Federal, State and local levels required for this type of management approach is a key characteristic of the estuary programs. This partnership, I believe, has been one of the Narragansett Bay's biggest successes.

Federal agencies that are participating in the Narragansett Bay Project include EPA, NOAA, the Food and Drug Administration, the U.S. Geological Survey, and the Army Corps of Engineers. Within NOAA, the Narragansett Bay Project works closely with the National Marine Fisheries Service, Sea Grant and the Coastal Zone Management Program.

Key Rhode Island State and local agencies and groups also participate in the management of the Narragansett Bay Project. A strong commitment on the part of Governor DePrete and the State of Rhode Island on the Narragansett Bay Project has played and will continue to play an important role in its ultimate success.

The Narragansett Bay Project program has been structured to include all of the above-mentioned agencies in the decision-making process. In addition, because EPA recognizes the importance of citizen participation in building consensus and support for the comprehensive planning and management process, user groups, environmental groups, academia and others have been included in the Management Conference.

The Narragansett Bay Project has the active involvement and close cooperation of various key groups on its several committees. Local citizens are helping shape the measures that will guarantee the protection and the preservation of Narragansett Bay.

Another important aspect of the Narragansett Bay Project is the role of scientific research and information. The first years of the NBP have involved extensive scientific study to fully evaluate and define the pollution problems in Narragansett Bay, and this information is being used to develop the management plan and will provide a solid, scientifically-credible basis for decision-making.

The incorporation of science into management process is an important component of the program.

Each National Estuary Program has four phases: establishment of the decision-making framework, characterization and definition of the problems, development of the Comprehensive Conservation and Management Plan, and the implementation of that Plan.

The Narragansett Bay Project is currently completing research being conducted under Phase 2 and is involved in Phase 3. An outline of the CCMP and detailed outlines of some chapters have been completed, and the first chapter, dealing with pathogens, is nearing completion. The CCMP is scheduled for completion by December of 1990. The CCMP will contain a description of each problem, specific

recommendations for abatement strategies, and an action plan for implementation of the recommendations.

Phase 4, implementation of the recommendations, will occur only after the management plan is completed. However, some identified solutions have already been implemented through Priority Action Plans with funding provided by EPA. The Hazardous Waste Reduction Project and the Land Management Project are being carried out by the Rhode Island Department of Environmental Management and have made significant progress in the short time since being established.

Over the years, I should point out, Mr. Chairman, that EPA has channeled more than $275 million in Federal funds that impact the Narragansett Bay area. A long-term monitoring program that is being designed by the NBP will be implemented by the State of Rhode Island. The State is required to produce a progress report every two years documenting the status of implementation and the results of the monitoring program.

It is critical to document these water quality improvements.

Mr. Chairman, I believe that progress is being made through innovative approaches to solving the nation's coastal problems, such as the NBP. By working cooperatively with States and other Federal agencies, by incorporating scientific information into decision-making, and by involving the public in the management process, we can effectively tackle the problems facing our coastal waters and protect them for the future.

One big issue that remains to be resolved, Mr. Chairman, is how are we going to fund these projects that are now being identified. Mr. Chairman, we have underway a study looking at the various alternative financing mechanisms.

As you are aware, Mr. Chairman, the Federal Government has reduced its commitment to the construction grants program. We are now involved in Rhode Island's establishment of a State revolving fund. Other States will make money available to carry out some of programs similar to that envisioned in cleaning up Narragansett Bay.

However, it is going to be difficult to find all of the necessary State and local resources that will be necessary to implement all the parts of the management program. We are hoping through this study that we now have underway that we will be able to come up with some other solutions that can be applicable not only here in Rhode Island, but in the other coastal areas as well.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Keough can be found at end of hearing.]

Mr. FOGLIETTA. Thank you, Mr. Keough.

The reason I smiled at the end of your statement was because as I was writing down the question, how should this be funded, you said, "Now, I'm going to talk about how it should be funded."

I thank you for that informative statement.

Ms. Tippie, should local effects monitoring of permitted dischargers be mandatory?

There is pending legislation before our Committee right now that authorizes it, but does not mandate it.

What would be the benefits or the drawbacks of local effects monitoring, and do you believe it should be mandatory?

Ms. TIPPIE. I think the monitoring is critical to understanding what is happening to the system, and I would feel that it is very important that we develop a mandatory program/monitoring program in these States.

Our National Status Program provides a sort of big picture of what is happening nationwide, but you need intense sampling in the bays to really get a handle on whether you have a problem.

Mr. FOGLIETTA. Any comment, Mr. Keough?

Mr. KEOUGH. We certainly agree that in order to document whether or not what you are implementing is working, you do need to have baseline data and you need to continue to track that data as the management program is implemented.

Mr. FOGLIETTA. Do you believe it should be mandatory?

Mr. KEOUGH. I think in order to document the successes and to make sure that the citizens know that they are getting the value for their tax dollars then mandatory monitoring should be put into effect.

Mr. FOGLIETTA. What is your opinion of the treatable discharge credits, the idea to get planners to offset increased point source discharges with harmful discharges?

Ms. TIPPIE. I happen to feel that it is a very wise idea to look at this question. In the case of the Chesapeake Bay, we implemented similar types of program through the critical areas program, where there is a trade-off established, and I think it is a very creative approach to trying to deal with non-point sources, which, by the way, I think is the real tough problem we have to deal with nationwide.

Mr. FOGLIETTA. Ms. Tippie, you note that the Rhode Island Coastal Zone Management Program Director sits on the Narragansett Bay Program committee.

How many members are there on the management committee?

Ms. TIPPIE. Actually, I am not sure of the exact number on the management committee. I will have to ask Mr. Keough.

Mr. KEOUGH. I think there are about twenty all together.

Ms. TIPPIE. Twenty? But we sit only on the management committee, NOAA does, and I have suggested we be put on the policy committee as well.

Mr. FOGLIETTA. Do you think that it is practical to have such a large number of people in trying to resolving the different orientations of the Coastal Zone Management and Estuary Programs?

Ms. TIPPIE. It is always difficult to do anything by committee. I think you are all very familiar with that problem, and I will vouch for the fact that in the Chesapeake Bay, we had a very similar problem with having to try to assure that we had fair representation of the different interest groups, and certainly twenty makes it rather difficult to work with.

However, the policy committee is a smaller group, and I think it is important that there be a smaller group that sets forth policy, and I would feel that it would be appropriate for NOAA, as I suggested, to be a member of that policy committee and to use that group as your key policy- making group.

Mr. FOGLIETTA. Should a lead agency be designated to handle coastal monitoring of data management, and, if so, which agency should have the lead?

Ms. TIPPIE. You want to answer that one or should I?

Mr. FOGLIETTA. You may each answer this question individually.

Ms. TIPPIE. Well, I will step forward.

I feel that NOAA by law has the mandate to monitor the coastal waters of the United States. It is actually in the MPRSA, Marine Protection Research Sanctuary Package.

In terms of the ambient monitoring of the water itself, the water quality, EPA, of course, has the mandate to do the compliance monitoring, whether or not industries are meeting with the regulations, and I think the two agencies need to just work very closely together to match up essentially that compliance monitoring effort with, of course, our on-going national water quality and living resource monitoring efforts that NOAA conducts.

Mr. KEOUGH. We think there can be a mechanism worked out. I do not know if it is necessary to designate any one lead for all the monitoring because I see this as being a program that involves all levels of government.

I certainly think, for example, that the Rhode Island Department of Environmental Management should play a key role in helping monitor certain areas as well. We do monitor. We have the National Marine Water Quality Laboratory located in Rhode Island. They could certainly play a role, and we see no problem in working to make sure that all of the necessary monitoring gets done. There could be a memorandum of understanding/a memorandum of agreement developed to divide up the various pieces of monitoring that we feel will be necessary to document the success of the program.

Ms. SCHNEIDER. Would the gentleman yield on that point or do you want to follow up on that?

Mr. FOGLIETTA. I was just going to say that my time is up. I would like to turn it over to the distinguished Ranking Minority Member, Claudine Schneider.

Ms. SCHNEIDER. Well, I would like to follow up on the Chairman's question, Mr. Keough, because as you point out, there is a shortage of resources in terms of financial resources to implement these programs, and one of the things that we are constantly struggling with in Congress is to find out where there is duplication, where there is overlap, and perhaps in the area of monitoring, as you point out, we would like to see a greater role on the part of the Department of Environmental Management.

Well, perhaps you two Federal agencies could determine that one might be a lead agency over another. I realize that means giving up something on the part of one or another of you, but I think that that might be a source of additional finances, and I wonder if there is any chance of that kind of direction occurring.

Mr. KEOUGH. One of the subcommittees that we do have is a long-term monitoring group that is supposed to be formulating all of the various policies. EPA and NOAA are on that group, and I am sure we could ask them to look at who could best be lead, I do not think there would be any problem with that.

I do not think there is any interagency jealousy or dispute over this. I mean, I think everyone recognizes the job has to be done, and whether or not it should be by an overview committee or having a single designated agency I mean, that is something we certainly have discussed.

Ms. SCHNEIDER. One of the frustrations that we have had over the last couple of years has been some of the cutbacks in the area, particularly for monitoring. It has been a constant struggle on my part to remind my colleagues that we will be challenged in the development of policy unless we have science that is consistent and on a continuing basis, and I wonder, given the various fluctuations in both of your monitoring budgets, how are we doing so far?

I mean, have things evened out now or where are we?

Ms. TIPPIE. Well, I will speak from the national perspective for NOAA.

We are very, very pleased that this year, the National Status and Trends Program was put in the President's budget that was submitted to Congress and you all supported it fully, and that program is a very exciting program. It helps us assess the health of the nation's coastal waters.

However, we are somewhat disappointed in that in the President's budget, we submitted also a Coastal Ocean Program initiative, which would help us address the problem of coastal water quality, fisheries productivity, and coastal hazards, and that budget submission was for $12.4 million. That was in the President's budget. Unfortunately, a few weeks ago, the House cut it down to $6.4 million.

So, we all were very disappointed to have a cutback in that particular initiative since it was specifically to address these coastal crises that we are seeing.

I do think that the struggle will continue in terms of budgetary resources, and I think one of the solutions is to work very closely with EPA, and we are working very closely at the national level between Dr. Tudor Davies, who is the Director of the Office of Marine and Estuarine Protection, under which the National Estuarine Program falls, and myself, actually co-chair of the working group, to try to resolve this issue of monitoring and also resolve the issue of coastal zone management and the National Estuarine Program.

Mr. KEOUGH. One thing we are doing, Congresswoman Schneider, as part of the overall financing study for Narragansett Bay is looking at monitoring as one of the financing case studies.

There are a number of solutions that are being looked at. For example, looking at whether or not for point discharges, you want to increase or start charging fees. Whether or not, for example, when we find violations there is a mechanism whereby fines and penalties collected can be put into account that subsequently could be used for monitoring and implementation needs.

We are looking both here at Narragansett Bay and around the country for these alternatives. We are holding a regional conference some time in November on alternative financing for all of the water programs, not just the coastal area. Because of the cutbacks, we are experiencing some problems in implementing all of the programs that we all know need to be carried out.

Ms. SCHNEIDER. Is it your understanding that after that conference in November that you would be reporting to Congress on your findings?

Mr. KEOUGH. Well, this is just a regional conference. At the national level similar studies have been underway for a year, and Rebecca Hanmer has testified most recently before one of your committees, the Committee on Merchant Marine and Fisheries. She has promised to work with Congressional staff on these issues.

Ms. SCHNEIDER. Great. And my final question has to do with the mussel watch program. Years ago, when that program first got started, some of my colleagues are aware of this, the mussel watch literally means watching mussels grow. You think watching a golf game is slow going.

It is my understanding that early on, as we began the mussel watch program, a lot of the research and activities were taking place in pickle jars, and this was when the scientific end of things was really under-funded.

I wonder if you could give me an update as to how we are doing on that, and I also know that the last eight years, there have been cutbacks in the mussel watch program, and that concerns me.

What is the current status of the mussel watch program?

Ms. TIPPIE. Okay. Well, the mussel watch program is part of what we call our Status and Trends Program, and you are right. Every year for the last several years, that has been zeroed out in the President's budget.

As I mentioned earlier, this year, President Bush submitted that Status and Trends Program and, in fact, the Congress approved it. It is still under-funded, though, in terms of the level, and one of the problems is we need to increase our spacial coverage, you know, the different sites where we collect mussels, as well as, of course, the parameters we measure.

For example, Tributyle 10 is a real key parameter that people have been very concerned about, TBT. However, we have not been able to analyze Tributyle 10 because of the costs involved, and, hopefully, if additional funds are forthcoming, we can begin to monitor TBT, which is a very, very great pollutant of concern in terms of use on ship paints and, you know, bottom paints for ships.

Ms. SCHNEIDER. Well, what I am mostly concerned about, despite the fact that we have now had an injection of new monies into this program this year with our new President, do we have enough of a scientific data base, given the fluctuations in the funding, for monitoring over the last eight years?

Is that scientific data base one upon which we can now base a policy, or is it too irregular because of the funding fluctuations? Is it able to live on a shoe string, in other words, during that time period?

Ms. TIPPIE. We have begged, borrowed and stolen to cover the Status and Trends Program for the last eight years, and, actually,—excuse me. Six years.

We have been sampling consistently since 1984 with the consistent methodology. We now have a good five-year data base that we can look at and see some beginning trends. However, we really need an additional five years of data to really be able to do the

long-term trend analyses to begin to get some assessment of what is happening nationwide in terms of trends.

I think that as long as our funding is continued in the next several years, that we will be able to give you some very valuable answers as to what is happening in terms of the pollutant levels along the coast of the United States.

Ms. SCHNEIDER. Thank you.

No further questions, Mr. Chairman.

Mr. FOGLIETTA. Thank you, Congresswoman Schneider.

Mr. Saxton.

Mr. SAXTON. Mr. Chairman, thank you very much.

I would like to pursue something that I think is key to this entire coastal situation, and it has been pointed out clearly by both of you, Ms. Tippie and Mr. Keough, and also by the status report that was recently published on the Narragansett Bay Project, when it says, "The end results of the NBP in December 1990 will be a comprehensive conservation and management plan that will outline a holistic approach to protecting and managing the Narragansett Bay."

And, Virginia, when you were testifying in your statement, you mentioned the—I am sorry. In a previous conversation that you and I had, you mentioned the non-point sources that contributed to the Upper Bay in the Chesapeake, amounting to something between eighty and ninety percent of the problem in that area, and that non-point had been traced back to many, many miles northwest in Pennsylvania from the Chesapeake Bay.

And when you, Mr. Keough, were testifying, you mentioned the National Ocean Environmental Policy, again suggesting that there is much, much more to protecting Narragansett Bay and coastal waters than just worrying about those sources of pollution that are immediately adjacent to or emptying into the waters that we are so worried about.

And as this Committee and other committees on Merchant Marine, other Subcommittees on Merchant Marine, begin to deal with this, we deal with issues that have to do with clean air. We have to deal with issues that have to do with the Clean Water Act that are far, far removed from coastal areas, and I guess I am not sure what my question is exactly, except to ask you to respond to what it is that you think is important about what is mentioned here on Page 1 of this update that is referred to as a "holistic" approach in terms of alternatives that we need to do and create awareness among the American public about how it is and what are the important things that we do to clean up our estuarine and ocean waters.

Mr. KEOUGH. Traditionally, we have just looked at the point sources. The factories and municipalities just discharging into waterways with the assume that cleaning up the discharge will clean up the problem.

What we are realizing from our research is that there are many other sources of pollution including nonpoint source agricultural runoff. We need to improve our agricultural management practices, particularly in areas along rivers or coastal areas that discharge into Narragansett Bay.

For example, we need to take a look at the use of pesticides and how they are applied. We need to have better pesticide registration and pesticide regulation.

We need to be concerned with the location of landfills. We need to look at leaking underground storage tanks, which are a problem along coastal areas. We need to take a look at protecting our valuable but diminishing coastal wetland areas as well, and Bill Reilly and the President have been very, very vigorous in support of no net loss wetlands program.

We need to protect the wetlands. They help buffer out some of the contaminants that find their way to the coastal areas.

We also need to concentrate on rivers that feed into areas like Narragansett Bay, and that is why we have worked very closely with the Department of Environmental Management from Rhode Island and the Department of Environmental Protection from Massachusetts, to take a look at some of the tributaries that feed into Narragansett Bay.

We also need to look at solid waste landfills. We need to look at Superfund sites. Even the issue of acid deposition and the emissions from factories, for example, and from automobiles must be examined for their potential impact on the coastal environment.

What we are trying to do is not just look at it on a media-by-media approach, which has been the traditional approach, but, rather, on an across-the-board approach taking a look at it not just the Federal responsibility, but also State and local governments and citizens roles as well in the development of what should be done.

That is what, I think, we mean by a "holistic" approach.

Ms. TIPPIE. I just would concur in that I think what is the old Pogo saying, we have met the enemy and it is us. We all each are individually responsible for the problems we are seeing in our coastal areas, and in the case of, I think, Narragansett Bay, Massachusetts has a responsibility in terms of what we are seeing in the Narragansett Bay area just as in case of Chesapeake Bay, Pennsylvania was a major contributor to the problem, and I believe that the solution is a comprehensive watershed management approach, and it goes back to the whole issue of land use planning, and I think that one of the mechanisms we can use to tackle this question of development along the coast is the Coastal Zone Management Act itself, and I am looking forward to working with you all in the process of the next year to reauthorize that Act to give it some teeth, to really tackle this problem of the watershed management, so that we can really carefully evaluate our uses of the land adjoining the water bodies that we are concerned with.

Mr. SAXTON. How much of the problem that you have defined through the NBP would you attribute, say, in terms of a percentage, to point sources that are directly identifiable and close to Narragansett Bay and how much would you attribute to non-point sources that are far removed that we do not usually look at?

Ms. TIPPIE. Well, it varies by pollutant. In other words, in the case of Narragansett Bay, let me use two very extreme examples, and please correct me if I am incorrect on these numbers.

But in the case of Narragansett Bay, I believe about ninety percent of the nitrogen, looking at our loadings that are coming into

Narragansett Bay, about ninety percent of the nitrogen is actually coming from sewage treatment plants; whereas, I think it is about fifty percent of the phosphorous is coming from sewage treatment plants, but in the Chesapeake Bay area, it is the inverse.

In the Upper Chesapeake Bay, it is about ninety percent of the nitrogen is actually coming and phosphorous is coming from non-point sources.

So, in different bays and for different contaminants, the relative proportion changes. However, in Narragansett Bay, a lot of the metals and a lot of the organics, PCBs and things like that, are coming from non-point sources, from storm water runoff, and, so, in each contaminant, it has a different scenario, and what it boils down to is I would argue that I think we have began to do a pretty good job with regard to point source control, and I think all of us are struggling with this issue of non-point sources and actual development, you know, land use, and that is, I think, a key problem, and I would weigh them both fifty-fifty actually overall.

Mr. KEOUGH. Yes, we do need to do more in a number of different areas. For example, combined sewer overflows are a major problem in many of our urban areas, such as in the Narragansett Bay area as well as, say, Boston Harbor.

We also need to look at things like making sure that oil tankers are sufficiently regulated. We need to look at plastics in the environment. We also need to look at ending all ocean dumping in the coastal areas.

Thus, there are a number of things that can and should be done to protect the coastal area.

Mr. SAXTON. Thank you.

Mr. FOGLIETTA. Congressman Davis?

Mr. DAVIS. I will yield my time to the other Members right now, Mr. Chairman.

Mr. FOGLIETTA. Very well.

Congressman Goss?

Mr. Goss. Thank you, Mr. Chairman.

Ms. Tippie, I, instead of beating around the question, am just going to ask you outright and direct.

You said several things about CZMA today. The last testimony we had from the Administration was that the program had done so well, that it was now a success story, and we could forget about it, and we were not going to have to reauthorize it.

Are you suggesting that the Administration is going to recommit to the Coastal Zone Management Program?

Ms. TIPPIE. I am pleased to be able to say that Secretary Mosbacher sent a letter in July to the attendees at the big Coastal Zone 1989 Conference that was held down in Charleston, South Carolina, and in his letter to the attendees, he reaffirmed his commitment to addressing the problems of the coast and asked them for advice and input and suggestions as to how to modify and forge a new partnership between the States and the Federal Government to deal with coastal zone management.

And he specifically referred to the Coastal Zone Management Act and reauthorization process that is coming up in 1990 and indicated his willingness to openly accept suggestions and ideas and to work very closely with the attendees at this conference and also

with the Congress in trying to tackle the question of the Coastal Zone Management Act and how can we fix it, how can we make it better, and the question is, it may not be in a traditional straight grants to the State program, but we may want to begin to look very closely at competitive grants, and we may want to look very closely at including wetlands protection, water quality issues, coastal hazards, public access, as specific criteria in the Coastal Zone Management Act which all States are mandated to develop programs to address, and that is the kind of issues that we are looking at over the course of the next several months.

Mr. Goss. Well, I think you have got the issues well documented. I just want to make sure that we have got a vehicle to carry it, and that was my concern.

I am encouraged by what I have heard you say.

My experience comes pretty much from the local government side, and I know we have some witnesses later I am going to be asking some questions to, but my basic question today is that I have discovered as we all have that there is often competition, conflicting usage, conflicting concerns, and obviously conflicting benefits involved in the types of programs that we are dealing with, and what I am interested in knowing is whether or not under the conflict resolution process, there is a formal way to do this in the management plans in your view.

You talk about continuous monitoring on the policy committee. Whether or not you feel this is something that should be set up in a management plan, so that we do have an automatic button to push when we have the shrimpers arguing with the turtle lovers, which will not apply here hopefully, but it is applying in other parts of the country at the moment, so that we have a forum for conflict resolution.

I am going to ask Mr. Keough the same question.

Ms. TIPPIE. I certainly cannot speak to the intentions of what will be in the EPA's Narragansett Bay Management Plan. However, I can indicate that it is—Secretary Mosbacher of Commerce is a very strong supporter of a conflict resolution process, and one of the issues that I have discussed with him personally is this question of conflict resolution and incorporating a mechanism in our Coastal Zone Management Act that would allow us to begin to address the problem of conflict between the user groups.

He is, of course, very concerned about balancing obviously the interests of the shrimpers and the interests of the turtle protectors, but I think also he recognizes and will re-recognize certainly that it is a difficult challenge, and we do need to set up a mechanism that allows for conflict resolution in our coastal areas.

Mr. Goss. I have used my time, and, so, perhaps we will get to that in a little bit.

Mr. FOGLIETTA. Congressman Machtley, do you have any questions?

Mr. MACHTLEY. I have just one.

Here in Rhode Island, we are going to be going through a comprehensive review of all of our city and town plans. Non-point source pollution has been discussed, septic tank, leaching fill runoffs, storm water runoffs, oil, sediment erosion. These are serious

problems which the local city and town councils and planning boards are going to have to deal with.

What should be the role of the Federal Government and EPA and NOAA in getting the body of knowledge that you have to the people who are going to develop coastal comprehensive land plans? How do you do that?

Ms. TIPPIE. Well, I will defer first to EPA.

Mr. KEOUGH. One of the central components in these coastal programs is technology transfer. We need to work with the local communities that are going to be responsible for implementing a lot of the regulations. It was envisioned that it would not be a Federal program when these first designations were set up.

Our primary role will be to develop some of the solutions to these problems and to pass that technology on to the local cities and towns by primarily working through the State.

We feel the State Department of Environmental Management should be responsible for doing a lot of the technology transfer with EPA giving technical assistance.

Ms. TIPPIE. With regard to NOAA's involvement in this technology transfer area, we recognize that perhaps we have not been doing as good of a job as we could have in terms of getting information to the local decision-maker, and we have mounted a new coastal ocean program initiative, the model of which is information for decision-making, and as part of that initiative, we are actively trying to take the kinds of products that I have included in your brochure as well as some of our high-tech computer information and data management efforts and get it out to the local managers that are in the process of developing those plans.

The mechanism, the transfer mechanism by which we will get it to the user is through our Coastal Zone Management Program in each of the States and through our Sea Grant Advisory Service, and we feel that these two mechanisms are very useful mechanisms for information dissemination and assistance with the management process.

Mr. KEOUGH. Congressman, I would point out that EPA is funding the Land Management Project which was created in the fall of 1988 to provide technical assistance to communities in implementing land use practices and management techniques that prevent and reduce pollution.

We are putting in about a $150,000, I believe the State's share is also around that figure. The program will work with local planning authorities developing non-point source pollution prevention control guidance and monitoring several pollution control demonstration projects to document and illustrate the use of best management practices for things like sediment control and erosion control.

Also, we will be looking at highway and urban runoff as well as sewage disposal. This Land Management Project, I think, will address some of the concerns that you have.

Mr. FOGLIETTA. I think that is about it.

I want to thank you, Ms. Tippie, and you, Mr. Keough, and your associates, for being here this morning to give us your valuable testimony.

Our second panel of witnesses is Ms. Caroline Karp, Project Manager of the Narragansett Bay Project; Mr. Robert Bendick, Director

of the Rhode Island Department of Environmental Protection; Dr. Judith Pederson, Bays' Program Coordinator, Office of Coastal Zone Management of the Massachusetts Department of Environmental Affairs; and Mr. Grover Fugate, Executive Director of the Coastal Resources Management Council.

I must stress once again that we strictly adhere to the five-minute rule so that we can complete all of the witnesses' testimony. I will signal the end of your five minutes by banging the gavel. If you would then complete your thought or sentence, it would be most appreciated.

Okay? Let us begin with you, Ms. Karp.

STATEMENT OF CAROLINE KARP, PROJECT MANAGER, NARRAGANSETT BAY PROJECT

Ms. KARP. Thank you very much.

On behalf of the Narragansett Bay Project, I would like to welcome this Committee to Rhode Island; we actually got some nice weather for this hearing.

In particular, I would like to thank Congresswoman Schneider for her assistance in arranging to be here with us and also her proven dedication to environmental protection.

I would also like to thank Congressman Machtley, who has in his short career as a congressman been extremely attentive to environmental problems in Rhode Island. I would also like to thank Peter Marx, who has been an extremely gracious host every time I visited Congresswoman Schneider's offices, and he has also helped enormously with my staff in arranging this hearing today.

I thought what I would try to do in my testimony is cover three large topics in five minutes. One is to give you an overview of Narragansett Bay's water quality problems. Second of all, I would like to give you a sense of the Narragansett Bay Project's ability to develop a management plan for Narragansett Bay, and a sense of the magnitude of our problems in implementing that plan. I also think that the Bay Project's experience in bringing together this management plan will be instructive to this Committee as you begin to oversee the national effort to create these bays programs and to solve coastal water pollution problems.

So, I will start with an overview of Narragansett Bay water quality problems. I think the key to understanding Narragansett Bay is to understand that sixty percent of its watershed lies in the State of Massachusetts. Massachusetts shares the watershed of two major tributaries to Narragansett Bay: the Taunton River, which drains the City of Paul River, Massachusetts, and the Blackstone River, which drains the City of Worcester, Massachusetts, as well as several major Rhode Island cities, including Woonsocket and Pawtucket.

Within the watershed that drains directly into the Providence River—an upper arm of the Narragansett Bay—there are approximately 800,000 people served by municipal treatment facilities, draining into that one arm of Narragansett Bay.

In addition, there are approximately a 100,000 additional people who are on individual septic systems, raising the potential for additional nutrient inputs to that river system.

There are also eighty-seven combined sewer overflows to the Providence River area that are as yet untreated and uncontained.

In addition, there are a number of direct industrial dischargers in that system, and we also have a problem with resuspension of historically contaminated sediments because this entire area, this entire region of Narragansett Bay really is the center of the Industrial Revolution. Although many of the industries departed, they left behind some quite contaminated materials.

As a result, we have observed water quality violations in Upper Narragansett Bay. We have seen metals violations. We have closed, as Congresswoman Schneider pointed out, about thirty percent of the Bay to shellfishing due to bacterial flowage related to sewage input.

The Blackstone River, in particular, has quite a serious metals problems. It has problems with PCBs. The whole picture is kind of grim in terms of the Upper Bay.

In terms of planning and implementation, I am going to divide that portion of my time between the two areas. I think it is important for the Committee to understand that the Narragansett Bay Project is approximately the thirty-second major water quality planning effort in Rhode Island since the turn of the century.

I would guess that experience is common across this country. Our problems really are typical of almost every coastal water body in this nation. We have numerous pollutant inputs, numerous pollution sources to Narragansett Bay, including point sources, nonpoint sources, combined sewers.

We also have numerous uses of the bay which are potentially not compatible or at least cannot co-exist in the same geographic area. For example, fishing and industrial discharges, municipal discharges, recreation.

In addition, we have numerous Federal, local, State and private authorities which exercise some jurisdiction over coastal waters. That obviously creates some problem in terms of managing a coastal water body.

In terms of implementation, Rhode Island has been quite fortunate in terms of having a recently-legislated comprehensive land use planning process, which is now being required of all of our cities and towns. That planning process, for the first time, will require cities and towns to look at environmental protection as at least one aspect of land use planning. A very important feature in Rhode Island which I hope the Bay Project can build upon.

I would say that there are three areas in terms of implementation where the Bay Project anticipates some trouble and probably could use assistance from the Federal Government. Those three areas are: technical assistance, policy assistance and financial assistance. I will go through each of them separately.

In terms of technical assistance, the Bay Project has been able to identify our problems. We need to then identify the corrective actions. I think from the Federal Government, we need numerical criteria for water, sediment, and living marine resources.

We also need new information on alternative waste water treatment practices. We also could use metals and organics standards for shellfish that are consumed by the public. I think there needs to be a renewed emphasis on water use and conservation.

I think there needs to be more emphasis on habitat protection and ecosystem health, looking at ecologically-important species as well as commercially- and recreationally- important species.

I think the emphasis on watershed management is crucial. We cannot solve coastal problems without looking at the watershed and without looking at land use within the watershed.

From a policy perspective, we need assistance from the Federal Government in terms of reconciling jurisdiction amongst Federal agencies, for example, EPA, Corps of Engineers. We could also use assistance in trying to reconcile responsibilities among States, in this case Rhode Island and Massachusetts.

There are obviously also places where the Federal Government could help in terms of various statutory authorities which affect coastal water quality. For example, the Federal Highway Administration.

In terms of financial assistance, it has become fairly clear that there is an enormous discrepancy between the projected cost of controlling pollution to our coastal waters and available funds. In the case of Rhode Island, I will give you a very quick example: the projected needs for the State of Rhode Island are, from $800 million to $1.5 billion, merely to maintain the present level of waste water treatment.

The available funds in the State of Rhode Island are presently estimated at approximately $200 million, assuming passage of some bond issues over the next few years.

I think Congress should be applauded for its renewed focus on non-point source controls and hazardous waste reduction, and especially for emphasizing the relationship between land use and water quality.

I have some other detailed comments on the Coastal Defense Initiative. I think this is an extremely important piece of legislation and has some very important aspects that I hope survive the congressional process.

Thank you very much.

[Statement of Ms. Karp can be found at end of hearing.]

Mr. FOGLIETTA. I thank you.

Mr. Bendick.

STATEMENT OF ROBERT BENDICK, DIRECTOR, RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL PROTECTION

Mr. BENDICK. Good morning.

I want to thank the Committee for being here and particularly to thank Congresswoman Schneider for her continuing concern about the environment in general and Narragansett Bay in particular.

I also want to thank Congressman Machtley for his continuing cooperation.

My name is Bob Bendick and for more than seven years, I have been the Director of Rhode Island's Department of Environmental Management.

During that time, I have helped to oversee the Narragansett Bay Project. I have watched and participated in its progress with interest.

I want to congratulate Dr. Eva Hoffman and Caroline Karp, the project's two executive directors, for their intense efforts on the Bay Project's behalf.

I also want to thank the volunteer committee members who have watched over the project and have played such an important role in making research decisions. Their most important job is yet to come, discussing and synthesizing an action plan for Narragansett Bay.

The Bay Project has shown that the bay's water quality is improving. This is helpful and important information which was not previously apparent. It proves that efforts made by Rhode Islanders, by environmental groups, like Save The Bay, by elected officials, and by government agencies are working, and that the millions of dollars spent on bay clean-up through Federal Clean Water Act Programs and by State and local programs and coastal zone programs, etc., have been a wide investment.

Unfortunately, this good news is balanced by several serious concerns. Portions of Narragansett Bay still suffer from low oxygen levels as Caroline enumerated. Is Narragansett Bay becoming Long Island Sound? Blackstone and Taunton Rivers are major contributors of pollutants to the bay.

While dry weather pollution sources are much improved, wet weather flows remain a critical and probably worsening problem. Urbanization of the bay shores and watershed further intensifies non-point problems. While toxic pollutant may have limited obvious and acute impacts on Narragansett Bay marine life, it may well have subtle but important impacts on the overall ecosystem.

The number of people who want to use Narragansett Bay for boating, commercial and sports fishing, access to the shore, shoreline residential and commercial uses, is simply overwhelming the resource. The State of Rhode Island is already taking strong measures to continue improvement of the bay's water quality, and I will not detail those here. They are in my written testimony, but these steps are not enough.

The Narragansett Bay Project will define additional actions which must be taken. There is a legitimate national interest in the quality of Narragansett Bay and other coastal waters.

To implement the bay plan, the Federal role in coastal protection must be continued and expanded in the following way: as shown in EPA's recent sector studies and confirmed by our experience here in Rhode Island, local government is extremely hard pressed in meeting the financial demands, upgrading, replacing and operating water pollution control facilities. These costs will be further increased by the advance treatment, such as nutrient removal, which may be needed in stressed parts of the estuary.

Given this, the Clean Water Act should be further amended to provide for implementation of the estuarine management plans. These amendments should allow for Federal block grants through States to municipal governments for water pollution control measures which conform to and carry out the plans adopted pursuant to the estuary program.

Industrial pre-treatment is working, but evidence suggests that toxics are still going down sewers and storm drains. The Resource

Conservation and Recovery Act, RCRA, so-called, is not sufficient to prevent this. Several measures would help.

Pre-treatment, RCRA and Super Fund Title 3 reporting requirements should be modified to allow States to more easily develop unified toxic reporting systems. The deposit system should be adopted for many industrial chemicals. EPA should support additional waste reduction research for specific industries and processors.

Federal agencies must do more also to prevent non- point sources of pollution. Road design and construction and runoff from roads have major impacts on non-point problems. It should become a specific goal of the Federal Highway Administration programs to minimize non-point pollution and Federal Highway Trust Fund monies should be made available for measures to accomplish this.

The Environmental Protection Agency should support further research into the impacts of septic systems on water quality. I think a particular problem around Narragansett Bay.

Land and water conservation funds should be restructured through the American Heritage Trust Act or other new initiatives to provide a consistent and sufficient source of funds for acquisition and protection of coastal open space.

Protection of coastal open space is expensive, but it is essential for recreation, fish and wildlife habitat, and water quality protection. Revenues from offshore oil and gas leasing are sufficient to fund a substantial national program.

While expansion of the Dingell-Johnson Sports Fishing Program for the Wallop-Grow Amendments has increased resources for fisheries management, the pressure on commercial and sports fishing stocks has increased even more dramatically. This pressure results not only from fishermen themselves, but also from human impacts on critical coastal fisheries habitat.

More effort is needed in fisheries management, for propagation of important marine species, and for preserving and restoring estuarine habitat tributary rivers and coastal wetlands. This might be accomplished through the uniform system of State salt water fishing licenses tied to increased Federal aid.

To also add that the coordination and funding of that is important and continuation of the Coastal Zone Management Program is particularly critical in this regard.

There are several bills introduced by Congresswoman Schneider and others contribute to meeting these needs, but more needs to be done.

Once or twice during the summer, I bring my children down to a dock in Narragansett Bay in the night and we shine a flashlight down in the water. At first, you do not see much, and then, a sort of plankton ball forms under the flashlight and then larger things start skittering in and out eating the plankton and then still larger things, shrimp and squid, come around and, finally, there are some big fish come in under the docks.

In this, there is a sense of the connectedness of estuaries. That food chain reaches out from Narragansett Bay into the oceans, into other estuaries, and tells us that these things cannot be done separately, that our coasts are a national concern, just as an important a national concern as mountains or rivers, and that there needs to

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be a continuing Federal presence if we are to save this estuary and the things it connects to along our coasts and our oceans.

Thank you.

[Statement of Mr. Bendick can be found at end of hearing.]

Mr. HERTEL (Presiding). Next, we will have Dr. Judith Pederson, Bays' Program Coordinator, Office of Coastal Zone Management.

STATEMENT OF DR. JUDITH PEDERSON, BAY'S PROGRAM COORDINATOR, OFFICE OF COASTAL ZONE MANAGEMENT, MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL AFFAIRS

Dr. PEDERSON. Thank you.

I am Judy Pederson, representing John P. DeVillars, Secretary of the Massachusetts Executive Office of Environmental Affairs.

I am with the Massachusetts Coastal Zone Management Program and the Bays' Program Manager.

I would like to take this opportunity to thank you for inviting Massachusetts to express our views and to commend the Narragansett Bay Project for developing a program that will ensure water quality and ecological integrity of the Narragansett Bay.

Massachusetts is also developing a comprehensive conservation management plan for the Buzzards Bay Project as is the Narragansett Bay Project, and in the process, we have reconfirmed the importance of managing land use and growth and development in terms of achieving our water quality goals.

Because sixty percent of the Narragansett Bay watershed lies in Massachusetts, the success in meeting the Narragansett Bay Project goals lies in reducing pollution from these watersheds.

I would like to discuss three areas where Massachusetts is working cooperatively with Rhode Island in the program in order to achieve the desired end results.

One is, first of all, in identifying the problem, and that is both the quality and the quantity of the pollutants entering the Bay and where they are coming from.

The second is to develop some action plans that will address these particular problems, and the third is to identify financial resources that will permit implementing the plans.

On its own, Massachusetts has been very involved and concerned about pollution sources in the watersheds, the Blackstone River and the Taunton River, and has been conducting a number of sampling programs over the past several years.

Currently, we are integrating these sampling efforts with the Rhode Island Department of Environmental Management, and are planning to conduct laboratory intercalibration analyses in order to ensure comparability of the sampling efforts.

Secondly, we are also planning to analyze some of the core sediment samples that are being taken in the Blackstone River. In addition, something not included in the testimony, we are cooperating between the two Bays' programs in terms of sharing ideas, resources, the results of our program, particularly in the data base management area, where Rhode Island has been very helpful to Massachusetts.

We recognize the importance of our two agencies and projects in working together, and I think this is a very valuable pursuit.

Probably of great concern to the Committee and to the Narragansett Bay Project are issues relating to bacterial contamination in the Mount Hope Bay and the extent to which Massachusetts is trying to address these issues; and the eroding sediments from the impoundments in the Blackstone River.

It is easier to comment on the status of the waste water treatment facilities. Currently, the Fall River and Somerset facilities are undergoing feasibility studies and plans are being developed to upgrade the discharges from these two areas.

In the case of Somerset, there is a moratorium on any further hook-ups until this occurs, and in the case of Fall River, EPA and the State agencies have signed an agreement that future discharges will not violate water quality standards, and a schedule is being developed to meet those standards.

We are aware of the problems with the impoundment erosion in the Blackstone. This is going to be a more difficult problem to resolve. Dam safety regulations will probably not allow us to go back and rebuild these impoundments and keep the sediments from eroding as they did in the past. We will have to work on some short-term solutions to stop the erosion and some long-term ones to deal with pollution in general, and I am not sure, frankly, what exactly will ultimately be the solution. I think we need some additional studies in that area.

In terms of trying to achieve what we want to achieve with our own water quality standards and obviously assisting Narragansett Bay in the process, I am pleased to announce that last week, Governor Dukakis signed a $1.4 billion bill that will allow the Commonwealth to borrow money and make this money available to cities and towns for the purposes of upgrading waste water treatment facilities.

Even so, with this sort of bond, we will be short in terms of the total amount that is needed for all of Massachusetts, and, secondly, rate payers will be paying between $800 and $1,200 for sewage treatment by the end of the decade.

We would urge Congress to reconsider the phasing out of the construction grants program and urge you to consider assisting in terms of reinstituting Federal finances for this type of activity.

There are two other issues I will just briefly touch on. One is, we are in the process of negotiating with EPA to have our non-point source program adopted. Because of the limited amount of funding, we will not be able to implement most of the best management practices.

The first efforts are going to be to educate the public because a lot of the communities will be voting in funds to develop drainage and storm water treatment with respect to highways and so forth, and they will have to assume the financial responsibility. We think it is important for the public that is going to end up paying for these remedial actions to understand what it is they need to do and what the result will be.

And, secondly, about ten years ago the Coastal Zone Management Program had sponsored oil spill response contingency plans. The plans for Mount Hope Bay, in particular, and for Buzzards Bay were not finalized. The Southeast Regional Coordinator for the

Massachusetts Coastal Zone Management Program is in the process of updating the plans, and they will be available shortly.

I know I have run through several different issues, and I would be happy to answer questions later. Again, thank you for inviting us to express our views.

[Statement of Mr. DeVillars can be found at end of hearing.]

Mr. FOGLIETTA (assumes the Chair.) Thank you, Ms. Pederson.

Mr. Fugate.

STATEMENT OF GROVER FUGATE, EXECUTIVE DIRECTOR, COASTAL RESOURCES MANAGEMENT COUNCIL

Mr. FUGATE. Okay. I am going to have to move through this fairly quickly.

I would like to thank the Subcommittee for the invitation today to share some of the Council's thoughts regarding the Narragansett Bay Project, and some of the lessons we think we learned from this endeavor.

While the Bay Project has not reached a conclusion and the success of this project has yet to be measured, we do feel there are lessons that can be gleaned from this exercise and should be applied to other estuarine projects.

For the purposes of discussion, I would like to break my presentation into two parts. The first part concerns observations which are generic in nature and can be applied to any estuarine project.

The second will be more specifically related to Narragansett Bay Project.

The National Estuarine Program, as the Council understands it, is a study of the problems confronting an estuary designated under the program and develop a comprehensive conservation management plan to solve those problems. This is the program, simply stated. The troublesome part is that the definition of the goals of the CZMP do not get much more detailed in the EPA guidance to the region.

Hence, there is considerable differences in interpretation among parties as to what a CZMP actually looks like and while we realize the latitude provides flexibility, it also creates an opportunity for conflict.

The National Estuarine Programs are basically water-oriented, yet many of the problems that it try to solve are land use oriented. The Coastal Zone Management Program, on the other hand, was designed to capture land use, but it is somewhat weak on the water quality side. Thus, the logical conclusion that one might reach is that the two programs should be intricately linked, but there are some hurdles to effective cooperation, which have to be overcome.

The first is that the Coastal Zone Management Programs have a responsibility to balance both development or economic considerations with environmental concerns with a greater weight given to the environmental side. The EPA programs for the most part do not give any consideration to economic factors and are strictly environmentally-protected oriented.

These differences in approach can result in divergent opinions, as one program must balance the greater good, and the other must merely protect. The conflict which arises here is exacerbated by an

additional problem and that is the Coastal Zone Manager in many cases is not part of the upper decision-making body. Instead, the CZM Manager must try to resolve these differences at the management conference level where the manager is one of twenty-seven or more individuals.

These large groups are not necessarily conducive to problem-solving discussions which need to occur. Thus, the only prospect for substantial input on estuarine programs and the CCMP available to the CZM Manager caught in these circumstances is the Federal consistency process.

If the CZM Manager has to resort to this method of dispute resolution, it could set up conditions which lead to unnecessary conflict and hamper the requisite cooperative efforts which will be needed to tackle the multi-dimensional problems facing our estuaries.

An initial attempt was made to resolve these issues at the national level when an MOU was entered into between EPA and NOAA regarding the coordination of the CZMP and the NEP. This effort was a first step in the right direction. However, much work remains to be done.

For example, the MOU still does not provide for a CZM Manager to take part in the policy committee. In addition, national and regional workshops have yet to be held. I understand one is scheduled for November in the eastern region, but this may be proved too late for the Narragansett Bay Project.

The issues I have raised here have been echoed in a recent report by William Travers, Executive Director of the San Francisco Bay Conservation and Development Commission, to the Evaluation Office of OCRM in NOAA. This report is part of Rhode Island's 1989, 312 evaluation, and I have attached the relevant sections of this to my testimony.

Aside from flushing out the implementation problems in the MOU, I think EPA would do a service to future estuary projects by providing the framework for the CZMP and laying out some basic steps for these programs to follow. The primary concern here is that the studies are done to support management needs and that we do not find management questions still lie unanswered because we do not have the proper information to solve them.

We think funds should start out low and gradual and the management conference should spend at least six months on the problem identification. It is a well-known fact that problem identification is probably the most crucial step in problem solving and results in eighty percent of the failures because either too little time is devoted to it or it was not done properly.

In order for a management plan to be successful, it must ask the right questions at its inception. Another area which we think needs further consideration is implementation. More specifically, plan review and adjustment.

The more successful management plans by their nature are dynamic changing entities which are constantly refined and upgraded. It would seem that the National Estuarine Program has placed most of its emphasis on plan development and little on evaluation and adjustment.

If these plans are dropped in some agency's lap and there is not a continuing commitment to the planning process, then these documents will be lost to obscurity relatively quickly.

Hence, all the more reason to involve the CZM Managers at the highest level as the Coastal Zone Management process can provide a vehicle for continued planning and development.

One last suggestion before turning to the specifics of the Narragansett Bay Project. Before any new estuarine programs become operational, we think it is imperative that the program people attached to these, projects come to areas like Narragansett Bay, and spend time finding out not only we did right as part of our estuary program, but also what we would do differently if we had our time back.

The Narragansett Bay Project is probably the most ambitious program in the nation. The scope of work before us touches on every major problem facing our estuaries today. Only time will tell if this broad spectrum of issues will get adequate treatment so that a meaningful plan and results can come about.

There is always the risk in these undertakings that by diluting one's efforts, these problems may only get superficial treatment. Related to this is giving adequate input from regulatory agencies so that the proper management questions get asked and answered.

In a recent report from the State's Environmental Quality Commission, on a review of the State's regulatory agencies, it was noted by the consultant in their draft final report that the Narragansett Bay Estuary Program related management plans are being developed with little or no policy direction or planning input from the three regulatory divisions. This input is not optional. It is necessary.

In addition to having regulatory input, it is important to have all the stakeholders sitting down at the same table, so that they will buy into the process. In some areas, this is not happening. In fact, attendance in general is a problem that must be dealt with. Sustaining interest and commitment over a five-year period is a difficult matter and one that we are having to come to grips with.

This "buyin" from interested parties and affected groups is probably going to be the most crucial element to the success of the Narragansett Bay Project. Without, it will become just another planning study.

In summary, the National Estuarine Program and Bay Project are well underway, and while the results are still forthcoming, the Council thinks it is not too early to take stock and learn lessons that are out there. There is much work to be done, some adjustments to be made, and the hard choices and work that successful implementation takes are yet to come.

The concept behind the NEP is a solid one, and we will work hard to see it through. The Council looks forward to the challenge, and I thank you for the invitation to present these ideas to you.

[Statement of Mr. Fugate can be found at end of hearing.]

Mr. FOGLIETTA. I thank you, Mr. Fugate.

Mr. Bendick, what authority, if any, does Rhode Island's decisions have on Massachusetts concerning non- point sources of pollution?

Mr. BENDICK. I do not think we have any direct authority on Massachusetts. We would—I think we have two options if we cannot come up with a cooperative plan, and I am hopeful that we can.

One is to go through EPA, Region I, and to try to get them to develop a joint program. Secondly is to take Massachusetts to court, and we would entertain neither of those options. Hopefully, the cooperative one will work.

It is our intention on the Blackstone River to work with EPA and the State of Massachusetts on a near-shore coastal waters initiative for the Blackstone River, so that we can work jointly rather than in opposition.

Mr. FOGLIETTA. Ms. Karp, the Narragansett Bay Project is now four years old. In hindsight, would you change anything that the project did during the past four years or, put another way, what lessons have you learned as a director of the program that you would want to share with the director of an estuary program somewhere else in the United States?

Ms. KARP. I think in retrospect, one major change I would recommend in future bays' programs is establishing as an absolute prerequisite that any candidate bay program would have to compile data in advance of being designated an estuary program.

I think, as Mr. Fugate correctly pointed out, one——

Mr. FOGLIETTA. I am sorry. You need to speak into the microphone.

Ms. KARP. (continuing)——compile all the available data on that particular water body before being admitted into the program.

I think, as Mr. Fugate correctly pointed out, one of the most important problems for a planning agency is identifying problems. You have to identify them properly right at the outset, and as I say, in retrospect, I think we would have been better off had we spent a year or so in analyzing available data before we had embarked on a very ambitious field program, which is what we did.

Mr. FOGLIETTA. Thank you.

Mr. Fugate, in your opinion, has the Narragansett Bay Project received adequate support, both technical and financial, from the Federal agencies involved?

Mr. FUGATE. Given the scope of topics that the Bay Project has decided to undertake, $5 million sounds like a lot, but any one of those topics could easily eat up most of that money. In fact, the Narragansett Bay Project could probably spend three times that amount on such a comprehensive agenda that we have before us.

I think the Federal Government has tried to give the support, but I think we probably got into an area not realizing the depth of some of the topics that we got into and time will tell whether, in fact, we have the money to study these issues or not.

Mr. FOGLIETTA. Ms. Pederson, first of all, your name plate reads P-E-D and my notes say P-E-T. Which is correct?

Dr. PEDERSON. It is pronounced Pederson, and it is spelled with a "D".

Mr. FOGLIETTA. I see. Thank you.

You or one of the other panelist mentioned that the Commonwealth of Massachusetts has established a $1.4 billion bond program to pay for water quality improvements.

Given reduced funding and the current conditions of the Blackstone and Taunton Rivers, do you have any estimate of how much money from this new bond program will be allocated to efforts related to the Narragansett Bay Project?

Dr. PEDERSON. No, I cannot answer that directly at this time because the bond was just—the bill was just passed last week, and it will be phased in over the next several years.

Mr. FOGLIETTA. Can you tell us what other programs are competing for that funding?

Dr. PEDERSON. Well, any upgrading of waste water treatment facilities in Massachusetts will be competing for those funds. In other words, this is a State revolving fund that will make loans and grants available to cities and towns.

In the end, the rate payers are going to assume the bulk of the repayment, and we are perhaps more aware of this with the Massachusetts Water Resources Authority, which has estimated that it may cost their rate payers about $1,200 within the next decade to fund that facility, and they are estimating between $800 to $1,200 for communities throughout Massachusetts.

Mr. FOGLIETTA. Is there any list of project priorities, or is it determined on a first come-first served basis?

Dr. PEDERSON. There will be a list of project priorities. To some extent, it is going to depend on where the facilities are in the planning phases, and, secondly, what the needs are.

Mr. FOGLIETTA. I thank you. I finished with six seconds to spare.

Congresswoman Schneider.

Ms. SCHNEIDER. Thank you so very much for your generosity, Mr. Chairman.

I would like to commend the witnesses who have testified here today. I will say that despite the fact that I have heard from each of you on a number of occasions, whether it be in the official hearing environment or an informal briefing, you will be glad to know that each time I have heard from you, I learned something new and different, and I thank you for the excellent work that you are doing for the State.

Caroline, you had mentioned, I believe, that this—the Narragansett Bay Project—is the thirty-second effort on the bay?

Ms. KARP. That is correct.

Ms. SCHNEIDER. Well, one of my frustrations is when I first came to Congress nine years ago, a number of Members of Congress got together and we said, all right, we are going to solve the problem of day care. We got very excited, and we put together legislation and started pushing it. That was nine years ago. To this day, we do not have such legislation.

Now, about fourteen years or so ago, maybe sixteen years or so, I got together with the Coastal Zone Management Program and was the Federal coordinator of that program, and at that time, that was one of those thirty-two different efforts that you referred to, where we all got together and we said, all right, we are going to clean up the bay, we are going to make this happen.

Now, I am feeling even more frustration, realizing that it has had a much longer history of effort towards cleaning up the bay, and I cannot help but wonder where is it going to end. Each one of the witnesses today essentially said you need more money.

We on this panel know that those Federal resources are extremely limited. Now, if we were to set priorities, I would be very inclined to say that prevention, an ounce of prevention is worth a pound of cure. Pollution that we prevent today and the monies that we use to spend on prevention is perhaps better spent that way than spent in the clean-up process, but I know realistically we need to do both.

We are going to be looking at some of the additional opportunities of the committee to be spending money. I for one am a strong advocate of the construction grants programs, and I know that over the last several years, it has been real hard for me to bring back those bags of money for the sewers and all sorts of things from Washington, and I regret to say that I anticipate it is going to continue to get tougher.

So, if we are to set priorities as to how to prevent some of the pollution or, if you want to incorporate the clean-up, where do you think we can best spend those precious dollars?

Ms. KARP. I would agree with you that we as a nation and also in the State and local level need to start concentrating efforts on pollution prevention, so-called raw material substitution recycling. That is only part of the problem.

In the case of Rhode Island, it might be quite effective because we do not have the same magnitude of water quality problems of Boston Harbor.

In many estuaries in this country, we simply have to look at reclaiming those water bodies. In Rhode Island, we have the luxury almost of trying to protect this water, what we have gained so far. If you are going to protect the water body, maybe your focus should be on pollution prevention.

In the case of estuaries where the waters are seriously degraded, I think you have to concentrate on point source control and some of the more conventional approaches to water pollution control.

Ms. SCHNEIDER. Well, I think that we all acknowledge that people pollute, and aside from the various point sources that we are discussing, much development has been happening along Rhode Island's coastal areas. In my own town of Narragansett, we have seen more condominiums go up there in the last couple of years than I care to remember being developed anywhere, and I think that as was mentioned, I think, by you, Mr. Fugate, earlier on, that local zoning and perhaps Mr. Bendick mentioned it also, that local zoning does play an important role.

I am inclined to think that much of the attention and activity and the focus now should be shifted more towards local zoning policies and perhaps the State ought to be in a stronger position of asking about carrying capacity with all the new construction that has been taking place in the coastal areas, and doing a cost benefit analysis, for example, and recognizing that that type of development is hurting another kind of economic development which, for example, might be shellfish, which, in our State, is a $17 million business.

So, to what degree are you using this kind of comprehensive thinking, Mr. Fugate, in dealing with the local zoning ordinances, in recognizing the bigger picture of the resources that are available in our bay?

Mr. FUGATE. The effect of zoning, I think, will have a greater impact on the Lower Bay more so than the Upper Bay. The Upper Bay is extremely densely developed at this point, and I think remedial measures, such as looking at the CSOs and those sorts of things, will have a greater impact there.

There is no doubt zoning will have an impact on the Lower Bay. In the new Comprehensive Planning Act that has just been passed by the State, the Coastal Council is providing guidance within that Comprehensive Planning Act to the municipalities on how to protect the coastal resources.

Ms. SCHNEIDER. But you are pointing out that local zoning will have an impact. My question relates to years past. Why has not some of the local policies had an impact up to this point? And this is years after.

Mr. FUGATE. One of the reasons for the impetus behind this new legislation that developed the Comprehensive Planning Act was the recognition that zoning was not doing the job that it was originally created to do, and that there had to be a much more comprehensive approach taken, and a much more heavy State emphasis on the continuity between municipal plans by ensuring minimum requirements are being met within the plan.

There was often a recognition that zoning decisions were completely contrary to any of the plans that the communities had developed, if they had developed a plan at all.

Ms. SCHNEIDER. Well, my frustration in that job at the time, was that we had developed a balance between Federal and State uses of development versus conservation much to the neglect of some of the local zoning ordinances, and I am out of time, is that right? Okay.

Mr. FOGLIETTA. Thank you.

Ms. SCHNEIDER. Thank you.

Mr. FOGLIETTA. Congressman Davis.

Mr. DAVIS. Thank you, Mr. Chairman.

As all of us are well aware, certainly it is no secret that the Federal resources are being stretched to no end. We see all kinds of projects, all kinds of areas where we ought to be spending money, and we just do not have the money.

I guess my question is, what kind of a commitment has the State of Rhode Island made to the Narragansett Bay Project, and what have you committed over a period of years? What are you committing now, and what are you committing in the future? Are you doing your fair share? Anybody that wants to answer.

Mr. BENDICK. I guess I, representing the State government, I can try to respond to that.

In the area of waste water treatment, the State has vastly overmatched the Federal resources that are available. We have had, I guess, about $200 million in recent bond issues. We have $80 million in bond issues scheduled to provide our input into the State revolving fund loan program. Cities and towns have stepped up to the line even when there have not been Federal grants to date to build waste water treatment plants.

In the area of coastal preservation, land preservation, we have had, I think, the highest per capita expenditure on open space preservation of any State in relation to our land area. Particularly, we

have had about a $150 million in parks and open space bond issues focused on preserving coastal land. We have another $75 million environmental bond issue this fall, in a special election. It is the only major bond issue in a very difficult financial time, which will deal with land use planning, funding the State land use planning effort with protecting our rivers, with open space preservation, and with response to environmental emergencies.

We have a series of new restricted taxes for environmental protection, one of which, I think, is particularly relevant here, a tax on hard-to-dispose of items, such as waste oil, antifreeze, tires, cars, which will produce about $2.5 million a year, all of which will go back to waste reduction, recycling, community collection, ways of avoiding wastes going to Narragansett Bay.

The State has a longstanding coastal zone program acknowledged as one of the most forceful in the country. Tough environmental enforcement. I think we have done just about everything people can think of to protect Narragansett Bay, but that is not enough. It is clearly not enough.

We are not asking for handouts when we ask for more Federal resources, but I think to answer Congresswoman Schneider's questions, the question about when will it end, it will never end.

Estuaries, like Narragansett Bay or Boston Harbor or Chesapeake Bay, are so attractive for development and growth and change in their drainage basins that we will have to run to stand still, let alone to go forward. Unless there is a greater commitment for every program on every level, we will go backwards.

Mr. DAVIS. From Rhode Island's standpoint, how do you compare in your commitment to the other East Coast States, Maine, Massachusetts, New Jersey, understanding you are giving your perspective? How do you think you compare in your financial commitment?

Mr. BENDICK. That is always dangerous ground because I do not know the figures from all the other States, but I would warrant that we have put as much effort into Narragansett Bay financially as anyone else, and Narragansett Bay is one of the very few estuaries in this country that has demonstrated to be getting cleaner, not dirtier, and I think that is evidence of that commitment.

Secondary, treatment here will be completed at every sewage treatment plan in the State by 1991. There are not many places that have achieved that.

Mr. DAVIS. Thank you, Mr. Chairman.

Mr. FOGLIETTA. Mr. Goss.

Mr. GOSS. Thank you, Mr. Chairman.

I think that we have all agreed that prevention is something we need to focus on as well as retrofitting. I think we all agree that growth is going to come because this is clearly a place where the grass is greener and one of the, I think, nicest areas that people know about and are going to continue to come here and live.

My question is, after doing my homework and reading the reports, is that there are something like twenty-nine municipal dischargers in at least two States, international shipping, and how many other local governments involved, I do not know, and I do not know specifically about the intensity and type of adjacent

upland development, land use development, but I certainly do know about the condominiums that Claudine speaks of.

I see more and more of this happening, and I have a very basic question, Ms. Karp, for you.

That is, there is going to be a cost involved. We have had—we all have an awareness of the State treasury. We have heard testimony to that. I think my colleague has spoken to the State of the Federal treasury, which we all read about every day in the paper.

My question is, do you think there is a constituency to pay for what we know we are going to have to do locally to pay for what we have to do to do the right thing?

Ms. KARP. Yes, I believe there is, and it certainly is in Rhode Island, at least in Rhode Island there is. I think this State has the citizenry that has proved itself to be committed to environmental protection, and I would say there is a commitment amongst the public at large for this kind of effort.

I would like to make one comment, however, about the Federal financial commitment. I am going to actually pass on a remark that someone else made. The national representative from the League of Cities and Towns commented that we are really talking about a national trust here, public trust, with these coastal waters and estuaries, and there probably ought to be some national obligation to protecting these adjacent coastal waters.

This fellow pointed out that the Federal Government was able to put together a $30 billion bail-out plan for the savings and loan industry. It seems that we should be able to do the same to protect a national resource that really feeds this country, provides recreation for the entire country. I would leave as my final remark that I think there is local commitment to put money into this, but I do not think it can be borne alone.

Mr. Goss. Thank you very much.

Thank you, Mr. Chairman.

Mr. FOGLIETTA. Congressman Machtley.

Mr. MACHTLEY. Thank you, Mr. Chairman.

I would just to follow up on that. As I understand, within one year, Narragansett Bay Project will submit a comprehensive conservation management plan. We have heard from Massachusetts and I am so glad they are here because the bay is not just an obligation of Rhode Island. It is an obligation of all of us.

My question is, unless the Federal Government continues to demonstrate a financial interest and develop an implementation body, are we going to draft a document that just sits on the desk? Must we have Federal involvement to force Massachusetts and other areas within our own State of Rhode Island to comply? What is your assessment of what is going to happen? I am worried. I think we are going to be in serious trouble.

Ms. KARP. I actually think not. I think Rhode Island and the Narragansett Bay area, in particular, actually has a very good chance of implementing almost all of the corrective actions that we will identify.

I think one of the strengths of the bay's program in general is that it was formed by public participation. We really had most of the interest groups, all of the regulatory agencies, participating in this decision-making process.

I think we have really a very strong commitment to make whatever changes are necessary to protect Narragansett Bay water quality. I think it can be done in a generally non- adversarial way, and I think we expect to be able to do that in the case of Massachusetts.

I do not really see a major problem in reclaiming Narragansett Bay. As Mr. Bendick has pointed out, we are already benefiting from the Clean Water Act, from a generation of the Clean Water Act, and I expect that trend to continue.

Mr. MACHTLEY. Thank you, Mr. Chairman.

Mr. FOGLIETTA. I would like to comment that we in Congress often have to prioritize the programs that are competing for Federal funds. When we vote to cut back or eliminate things like the SDI program, the MX missile, or the B-2 bomber, we do so because we think that some of the funds could be better used for programs like the National Estuary Program. That I believe is a bipartisan view.

Mr. BENDICK. If I could just add one comment.

Sort of prior to the level, the department which I head now has an enforcement action against six or eight municipal governments in the State for various water quality problems.

Four of those governments are old mill towns and with very low-income people, and they are going to be extremely hard pressed to meet our recommendations, not recommendations, our requirements.

I do not know, given the amounts of money involved, how we are going to reconcile that. How we force people not to send their kids to schools or not to do other important social things and take water quality steps which benefit the State and the nation as a whole.

The municipal—we—over the last several years, we have shifted the burden from Federal to State level. We are now talking about shifting the burden from State to municipal level. The municipal governments cannot carry that whole weight. They cannot do it, and unless we find a better way, either at the State level or at the Federal level, to share that weight, we will not see the improvements we want. It will not happen.

Ms. SCHNEIDER. Would the gentleman yield on that point?

Mr. FOGLIETTA. Certainly.

Ms. SCHNEIDER. It seems to me that when you talk about shifting the financial burdens of a local government, I do not—I am not of the opinion that that is necessarily where it ought to go. I think that we are talking about getting back to the etiological philosophy that the polluter pays. If it is the construction of an industrial facility or a condominium or whatever it might be, I think there needs to be a value added cost so that either that facility can immediately integrate into the construction process a hazardous waste treatment technology or some type of mitigating technologies to prevent the problem from the outset. Unless we pass that cost on to the individuals that are generating that waste, you are not going to get that kind of continuing public support.

I think that, Mr. Bendick, I would like you to pursue this, if you would. It is very interesting to me. In particular, there are certain activities by the governments, local governments, or industries within those local governments serving very well-off financial

strata of our population, and that they cannot for some reason conform to some of the requirements.

Mr. BENDICK. I mean, my position, the position of the department is they have to conform. There is no choice, but—our position is that it is too bad, that they have to conform. We are entrusted with upholding the law. I think that the kinds of things that Congresswoman Schneider just described can help, but part of these problems are just caused by regular old people, and when they say from Massachusetts that the average cost to a family is going to go up $800-1,200 a year, I have worked in government for a long time. That—you are talking about a profound political consequences from a shift in costs like that, profound, and we are going to see all sorts of different things happening as a result of that.

So, some of it is just regular people. I mean, one of our problems as a small community, mill town, that has combined sewer overflow problems that have to be corrected. I do not know how that—that is a legacy they have inherited. I do not know how they are going to do that.

Mr. FOGLIETTA. Thank you.

Congressman Hertel.

Mr. HERTEL. Thank you.

You know, the turn-out of Members of the House here is a great tribute to you, Mr. Chairman, and to Ron to have them come to his district and Claudine Schneider, for all of her work and interests, and I think it is because there is so much to learn here today. Some of the suggestions of Mr. Fugate have made, I think, we have to do the coordinating of some of those differences and some of the lack of clarity and, Dr. Pederson, you gave us some excellent examples of the cooperation and implementation at a very good level.

But in the interest of time, I am going to submit some written questions for these and other witnesses. You know, when the Subcommittee planned to come here, we did not believe we had votes on Monday because normally we do not, and we had to schedule the hearing in advance. So, I will be giving some of the witnesses some written questions that they can answer.

But I would like, Dr. Pederson, for you to give my best to my good friend, Governor Dukakis, please.

Thank you, Mr. Chairman.

Mr. FOGLIETTA. I thank you all very much. Very informative. We will get back to you with some improvements, I hope.

Our third panel is Ms. Trudy Coxe, Executive Director of Save The Bay; Ms. Mara Cherkasky, representing the Rhode Island League of Cities and Towns; and Ms. Holly Desrosiers of the Rhode Island Marine Trade Association.

Okay. We will start with Ms. Coxe.

STATEMENT OF TRUDY COXE, EXECUTIVE DIRECTOR, SAVE THE BAY

Ms. COXE. Okay. Thank you very much.

My name is Trudy Coxe, C-O-X-E, and I am the Executive Director of Save The Bay, which is Southeastern New England's largest environmental organization. We now have over 12,000 members, and I want to thank particularly Congresswoman Schneider and

Congressman Machtley for continuing to play such an important part in the clean up of Narragansett Bay and tell all of you how glad we are to have you appear in Rhode Island. I hope before you leave, you spend a little bit of time on Narragansett Bay. I think you will find and agree that it is the most spectacular bay in the world and you should eat some of our quahogs and eat some of our lobsters to really get to know the place well.

As the Narragansett Bay Project is replicated around the country, which is a move that we heartily endorse, it seems to us that the opportunity exists for each new project to build on the experience of its predecessors. So, toward that end, Save The Bay has submitted detailed written testimony recommending improvements to the National Estuary Program.

These suggestions necessarily highlight the shortcomings of our own Narragansett Bay Project in order that others may gain from our experiences, but they are not meant to imply that the project is in any way a failure. Taken as a whole, the project, we believe, has been our best opportunity ever to put together the partnership required to restore and to preserve the health of Narragansett Bay.

For the first time, in fact, Narragansett Bay has had a professional staff in government, not outside of government, in government, whose sole function is to monitor the bay's health and to improve its management.

From our own perspective, Save The Bay has found that the science that has come out of the project has been particularly useful. We have just finished our own long- range planning process, and that process was heavily influenced by the project science which showed that the Blackstone River, as an example, is the second largest source of toxic pollution in Narragansett Bay.

This, in combination with data showing that portions of Mount Hope Bay, may be clean enough for shellfishing, a bay that has been closed since the early forties, led Save The Bay to develop its own Massachusetts program this year.

However, we agree with Caroline Karp and Bob Bendick that collection and synthesis of data is relatively trivial in comparison to building a management plan for the bay, a task that we are just beginning here in our State.

Under congressional mandate, the Narragansett Bay Project has just one year left to produce a plan, to convert the concerns for the bay that many Rhode Islanders have into specific tasks for Federal, State and local legislators and agencies.

All our work over the last four years has been in preparation for really the greatest challenge, the Narragansett Bay Project, and, so, you question, so what. So what if there are toxics in the Providence River? So what if human wastes from combined sewer overflows threatens our shellfish?

We think that this information must be translated into strategies for bay clean-up. Here, science must interact with law, public perception and politics. The task is far from easy. Consider the Narragansett Bay Project studies of fecal contamination of the bay. Though a great deal of money has been invested in raising questions about packages in shellfish, the ultimate management question is whether to move the shellfish closer line north or south. To move the line north, Rhode Island must work within the Food and

Drug Administration guidelines which all but dictate procedures. Valid scientific questions of public health, the validity of indicator organisms and comparative risks are simply inapplicable.

On the other hand, moving the line south would be politically herculean and require far more supporting data that the project was ever willing to pay for. So, we are in a position where whether the line is to be moved north and south is unknown.

In answering so what, we must involve the public and government agencies. Since Rhode Island's Coastal Resources Management program will presumably require alterations to meet project goals, it is important that the Coastal Resources Management Council understand the project and its significance.

Since our particular sources of pollution are very serious threats to the bay, the Commonwealth should play a much larger role in the project, particularly since Congress mandates that the governors of both States sign a management plan. We think that it is unfortunate that Massachusetts' continued failure to sign the project designation declaration is still a reality and it may be a harbinger of future impediments to interstate cooperation. I think that is particularly important when one considers that, for example, seventy percent of Mount Hope Bay is in Rhode Island, yet ninety percent of the pollution that is there comes from the State of Massachusetts. We do not have the kind of cooperation that is needed.

In the long-term, Narragansett Bay is going to need more than just a good friend. It will need a strong office to ensure implementation of this plan and future bay protection, protection initiatives.

The bay project cannot, in our view, be allowed to die after five years of work, much like 208 did. Save The Bay believes that the Narragansett Bay feels that the necessary funding and staffing should be created and located in our governor's office.

From this position, the bay project would be able to work with Federal, State and local agencies and lawmakers as well as the university community. With the support of the governor, the project would be able to critically examine State activities and to articulate overriding goals for the bay.

This office and one that is similar in the State of Massachusetts' governor's office would ensure that milestones be established by the plans, that they be met, and that an annual report to the public on our progress would be submitted regularly.

Finally, there is the issue of money, as we have all discussed many times today. The State of Rhode Island and the Commonwealth of Massachusetts must commit to adequate funds to finance implementing the plan. Further, the Federal Government needs to recognize the public's overwhelming support for clean estuaries and institute a matching grant program specifically to support activities to restore and to preserve the health of our bay and our estuaries.

Though Federal dollars are scarce, Congress, we think, must respond to the public's mandate for environmental protection. I think it will probably go on my gravestone, but I—and I have it billions of times, but I think it needs to be said to all of you, if there is money for highways, there is money for outer space, and if there is money for outer space, there is money for open space, and if there

is money for Star Wars, there is money for our wars, and I have to assume that since you have taken off half a day to be in Rhode Island to talk about bay protection and bay clean-up, you, too, will join with us in demanding that more money be spent on this very, very important resource.

Save The Bay, like others here today, has worked long and hard in the bay project and has a great deal to show for the effort. We have learned that the Blackstone River is the second largest source of toxics in Narragansett Bay.

We have learned that combined sewer overflows dump billions of gallons of polluted water into the bay every year, but that knowledge leaves us with a profound responsibility to act.

We have spent far too much time and money on the project thus far to let it end as an academic exercise.

So, we are really here today to ask that you help us make sure that not just one problem is solved, but that many are, and I thank you very much for giving us your attention.

[Statement of Ms. Coxe can be found at end of hearing.]

Mr. FOGLIETTA. Rather than put those words on your tombstone, put them on a bumper sticker and send them to Members of Congress where some of us will be sure to display it.

Ms. Desrosiers. Is that the proper pronunciation? Desrosiers.

STATEMENT OF HOLLY DESROSIERS, RHODE ISLAND MARINE TRADE ASSOCIATION

Ms. DESROSIERS. The Rhode Island Marine Trade Association represents over 200 marine businesses here in Rhode Island. Many concerns come to mind when recreational boating looks at the quality of our bay.

Rhode Island Marine Trade places sewage disposal at the top of our list. The boating industry contributes only a very minute portion of effluent in the bay, but is very concerned over any amount that finds its way into our bay.

It has been estimated that one discharge from the Providence sewage treatment facility would equal the entire year of boat sewer effluent. We are not challenging to what degree boating pollutes, but we are looking for answers to elimination to all pollution.

Last month, Rhode Island Marine Trade Association participated with the University of Rhode Island Sea Grant Program in a seminar on pump-out facilities. Some of the following actions resulted from that seminar: information from the Narragansett Bay Project studies proved very helpful in presenting the facts. Mariners presently are installing pump-out facilities where needed, and they are charging prices that will encourage usage.

The mariners feel that this service should be an asset to their customers. They are also studying the best methods of location to add convenience, which will encourage boaters to use the facilities often. We are looking into fixed systems and portable systems for the marina pump-outs as well as barge methods for pump-out servicing of mooring areas.

Some disposal problems are presently being addressed, such as acceptance of the effluent by town sewage plants as well as the fact that some marinas are not connected to the sewer lines.

Presently, these problems are being worked out with individual cities and towns. Marine Trade is very concerned that boating effluent does not find itself returning to the bay via the treatment plan. RIMTA also agrees that the marina construction plans should include provisions for boat sewage disposal.

We would like to encourage the Department of Environmental Management to install courtesy pump-out facilities at all the State facilities. We also suggest that the new harbor plans that they are presently being submitted to the cities and towns to Coastal Resource Management should include shore-side facilities and adequate garbage containers at municipal docks, ramps and parking areas.

We are encouraging our marinas to provide clean and easily-accessible shore-side facilities for their customers. We also recommend that the State pump-out facility at Fort Adams State Park at Newport be activated and publicized immediately for use.

In other avenues of support for a clean Narragansett Bay, RIMTA discourages the use of styrofoam and plastic products on board and on shore. RIMTA agrees that items such as six-pack ring stops, plastic cups and plastic bags, endanger wildlife and the quality of the bay. We are increasing public awareness as to the importance of proper trash disposal, oil and batteries, as well as the proper use of marine chemicals through education.

We hope the State will support our efforts by instituting educational public service announcements on local media. We hope that Narragansett Bay Project education committee has plans to publish education booklets on these subjects.

One local television station is doing an excellent job of educating the general public through a program called "Have a Nice Bay". We need more of this type of awareness program. They are informing the public of what pollutes and how they are polluting the bay.

Yacht clubs in Rhode Island are responding to the bay's need by educating their members via newsletters. The results are very encouraging. The boating public is very cooperative in following through suggestions on eliminating pollution, but we have to open up the avenues for them to acquire updated information.

R.I.M.T.A. would like to convey the fact that a greater cleansing action in the estuaries could be created by increasing the flow in the harbors and marinas through dredging. Dredging would create deeper channels with greater flushing actions and, therefore, create cleaner harbors and cleansing of the shellfish beds at the same time.

Recreational facilities are self-disciplining themselves in waterfront clean-up of marinas and adjacent shorelines. It is very gratifying to see local community trash bashes being created. The Narragansett Bay Project is very helpful in pointing out ways to eliminate possible pollution from the recreational boating industry.

Caroline Karp, Project Manager, appeared before RIMTA and presented a new and different viewpoint of the bay than we had seen before. Information that the bay has found from studies is now being projected into every-day planning and new ideas.

I value my opportunity to be the voice of recreational boating for Rhode Island by serving on the management committee. This allows us direct input to the Bay's Project concepts and offers a

chance to air our views and our ideas, differences and concerns, early in the program.

It was an excellent idea to have representation from the user groups on their committees.

Pursuing and establishing an equitable water quality formula with true values should also be a top priority. A formula representing true facts and common sense would make for an amicable coexistence between boaters and shell fishermen. Recreational boating and commercial shellfishing share equal interests and needed use of the bay. Both industries should be treated equally in decision-making.

Recreational boating contributes a great deal of economic impact to the State of Rhode Island. The State should encourage the growth of marine industry in Rhode Island. Marinas provide access to the bay for many thousands of boating families. In fact, one-third of Rhode Island's population go boating every year.

Boating is the number two use of all coastal waters with swimming as number one. We need the Narragansett Bay Project studies to guide boaters to use it wisely. The studies produced by the bay project will prove vital to the proper management of the bay in the future.

The bay belongs to everyone and all user groups have to enhance each other and work together to make our bay a clean bay for everyone.

Thank you.

[Statement of Ms. Desrosiers can be found at end of hearing.]

Mr. FOGLIETTA. How about that? 0000. You went exactly five minutes.

Thank you.

Ms. Cherkasky?

STATEMENT OF MARA CHERKASKY, RHODE ISLAND LEAGUE OF CITIES AND TOWNS

Ms. CHERKASKY. Mr. Chairman, Members of the Subcommittee, my name is Mara Cherkasky, and I represent the Rhode Island League of Cities and Towns.

I am here today to discuss from the municipal perspective the Narragansett Bay Project.

I appreciate very much the opportunity to appear before you, and I thank the Subcommittee Members for any role they have had in making the Bay Project possible.

Among Rhode Islanders, it is generally agreed that Narragansett Bay is the most important resource of any type that the State has. It is an important part of our life and culture. Where George Washington threw a silver dollar across the Potomac, Roger Williams rowed up and down Narragansett Bay. Our State shellfish, the quahog, is something we enjoy eating. Our unofficial State cartoonist draws much of his inspiration from the bay. We draw much of our wealth from the bay. Rhode Islanders and tourists alike are drawn to the bay.

The bay's health is very important to us, and the Narragansett Bay Project's main purpose is to ask, how do we manage this health; how do we manage coastal waters?

The project will give us the answers next year. Of course, we can already guess at some of the answers: stop the flow of sewage into the streams and the bay; manage growth along waterways; abate non-point sources to better land management practices; and so on.

Over one-third of the municipalities border Narragansett Bay. A number of others are connected by rivers, and all are in close proximity in a State this small. In general, waste water treatment is a local function. Zoning and land use regulation are also local functions.

It is, therefore, likely that the kind of water quality improvement measures the Narragansett Bay Project proposes next year will be directed towards cities and towns: capital improvements of waste water treatment facilities; new land management practices; more stringent ISDS management; more careful planning. None of this will come as a shock.

Cities and towns are already struggling over how to finance waste water treatment that is mandated under the Clean Water Act and what to do with the resulting sludge, how to pay for CSO studies, not to mention CSO abatement. A preliminary study by Smith Barney and others for the Rhode Island Department of Environmental Management gives us the news that all required abatement measures will cost us—municipalities—about $1.4 billion over the next fifteen years.

This will cover rehabilitating the waste water treatment plants, building or rehabbing sewers, abating CSOs and non-point sources, and other water and waste water projects.

Another study, sponsored by the Narragansett Bay Project and carried out by the environmental consulting group Apogee, Inc., evaluates funding mechanisms, describes their shortfalls, and prescribes the best means of using what funds are available to the greatest effect.

Apogee will also undertake demonstration projects and prepare analyses of specific financing strategies that can be applied to high priority problems. The Rhode Island General Assembly earlier this month passed legislation to establish a revolving loan fund as directed by the Clean Water Act. But we are talking here about loans, not grants. How will the money be paid back?

The Federal Government has cut out the construction grant program and is only making limited capitalization grants to the States for loan funds. The State is barely in a position to come up with the matching dollars for the loan fund, much less make up for the loss of Federal dollars.

In the end, the burden falls on local governments, which have the most limited means. In Rhode Island, municipalities must rely very heavily on the property tax, and they have no place to pass the buck.

Cities and towns naturally will do what they can, but what they can do is very limited and very piecemeal. This is an issue of fundamental concern and, therefore, warrants more support by the Federal Government.

The Coastal Defense Initiative of 1989, if passed, would go a long way towards setting us on the right track, including providing technical assistance and funding for State and local coastal programs.

Obviously, changing land management practices is extremely important if we want to clean up the bay and other waters. That is why the Land Management Project, established in 1988 as a sister organization to the Narragansett Bay Project, is so important. It is the Land Management Project that works with cities and towns. Its professed purpose is to demonstrate the effects of land use on water quality and to assist communities in their efforts to manage non-point source pollution in concert with their efforts related to planning goals.

It is doing this by working with local and State agencies, private firms, agricultural operators and interest groups to sponsor the development of demonstration projects, illustrating specific approaches to the management of the non-point source pollution.

It responds to cities' and towns' requests for technical information or for interpretation of scientific data from other sources. It is developing fact sheets, data matrices and other educational tools. It is also holding workshops on technical and planning aspects of growth management and non-point source management. It prepares model ordinances relating to non-point source control and assists in evaluating costs and benefits of various approaches and potential financing mechanisms, provides referrals and condenses scientific and engineering materials for the use of local decision-makers.

In general, it acts as a consultant to cities and towns, free of charge.

The Land Management Project will work with the communities in the local comprehensive planning process. Comprehensive plans were mandated by the State legislature in 1988 and are to be completed by the end of next year. The League, in fact, and the project will be collaborating during the remainder of the summer on a newsletter of information on comprehensive planning requirements and techniques.

Examples of how the project is working with cities and towns are as follows. In North Kingstown, East Greenwich and Warwick, it has been assisting in aquifer and surface water protection programs in the Hunt Potowmack Watershed. According to the North Kingstown planner, Marilyn Cohen, the assistance offered by the Land Management Project director Jennie Myers has been invaluable.

For example, she provided information on how a regional group can be organized to work effectively. She also provided another voice from the natural resources perspective and has been a helpful hand in dealing with State agencies.

Mr. FOGLIETTA. I am going to have to stop you at this point.

We are working with a five-minute rule and you are over that mark, but we would be happy to listen to you, except for the fact that we have just fifteen minutes left to ask questions.

Ms. CHERKASKY. Thank you.

[Statement of Ms. Cherkasky can be found at end of hearing.]

Mr. FOGLIETTA. By the way, anything that we have stopped you from delivering verbally, you can send in for the record.

Ms. Desrosiers, you recommended dredging as a possible method in your written statement, of both creating cleaner harbors and cleansing shellfish beds.

Just elaborate on that just a little bit for us.

Ms. DESROSIERS. Our dredging committee feels that by dredging the harbors, you create a deeper flow of the water which then will in turn cleanse it out. Right now, it flows at a slower rate than it did years ago, when the channels were much deeper, and also by dredging within the marina, it would open up the space under the slips themselves and create more flow, and when it gets out into the bay, they stipulate that——

Mr. FOGLIETTA. The greater flow of the water will clean it up?

Ms. DESROSIERS. Right.

Mr. FOGLIETTA. Ms. Cherkasky, do you believe that the towns and cities of Rhode Island have been sufficiently involved in this project? Do they feel as though they have been sufficiently involved?

Ms. CHERKASKY. In the Narragansett Bay Project? I think they have not been very involved in the bay project. They have been informed of its progress, but the Land Management Project is really the arm of the bay project that has worked with the cities and towns, and because there are only two staff members on the Land Management Project, they have only been involved as much as the Land Management Project has had time to work with them.

Mr. FOGLIETTA. I thank you.

Ms. Coxe, I took a walk this morning before this hearing, and the areas just surrounding the beautiful harbor were quite heavily polluted with bottles and cans and plastic containers, things that very easily could have been dropped into a receptacle.

Now, I know you are planning for a cleaner bay and changing the habits of people and industry will really require a revamping of environmental values and ethics of people, environmental ethics.

Have you been involved or has your organization been involved in the kind of education programs for young people and other programs which would teach people that it is just as easy to chip in and clean up as it is to litter?

Ms. COXE. We have—most of our attention over the last nineteen years in Save The Bay history has been focused towards involving adults in—and really trying—I think one of the things that we have learned as a citizens environmental group is that we do not go to college and come out prepared to be part of government. People do not know how to attend hearings. They do not know how to start a petition drive. They do not even know what they are supposed to wear if they go to a city council meeting.

So much of our attention has really been focused on teaching civics to citizens and what the zoning board does, what the planning board does, that sort of thing. However, very recently, we changed our focus a little bit. We now take fifth and sixth graders out on the Narragansett Bay, all through the fall, thousands and thousands of children. It gives these children an opportunity to see the bay firsthand and really begin to understand why it is important when they grow up and what they should be telling their parents when they go home, why it is important for they all to behave better, and I think you are absolutely right. Each one of us has a stronger role to play, and perhaps the best way to do that is through better education and through all of you setting the exam-

ple as well as all of us setting the example and being much better citizens.

Mr. FOGLIETTA. I thank you. Congresswoman Schneider.

Ms. SCHNEIDER. I am only smiling because I am savoring the idea of citizens arrest for littering. That is all. It has an enormous amount of appeal in this place.

Trudy, I wonder if you could just highlight what you perceive as being some of the weak points in the governance of Narragansett Bay.

Ms. COXE. Most of those points are put into our written testimony.

I think I will go back to what Grover Fugate and Caroline Karp mentioned before, and that is that perhaps in looking back and certainly future estuary projects, it is extremely important that we ask the right questions up front. I do not think we ever said to ourselves a simple question like do we want to open certain areas in Narragansett Bay to shellfishing, and I would assume that the answer would have been yes, but we never really asked it that way.

So that we are now in a better position to say, okay, this is what we have to do and this is what we do not need to do in order to achieve that objective.

I think that it is very, very important next time around to make sure that deadlines are met. We have been very unhappy with—I think there are between eighty and a hundred different scientific projects going forward. It has been very unfortunate to see so many of them not meet the time frame that they were supposed to use, and in the case of the project, we have almost been hamstrung in our ability to make those who were paid to do the job get it done in time, and as a result, some very, very important studies that really are going to have an impact on the final conclusion of the project may never get done.

And there has not been the ability for the project to really put through to the people who are supposed to be doing the job and getting it done in time.

I think a third recommendation, again it is so much easier after the fact, is that I think often we have looked at the project as really the answer to everything that we do. There is a Brown Tide problem in Narragansett Bay, so let us throw it to the project. There is an World Prodigy spill in Narragansett Bay, so let us throw it to the project, and that at times, I think, seems logical. However, what it means is that overall work does not get done, and I think that is a real concern to us.

Finally, I would beef up the education effort much earlier on. I think the project has had a decent education program. I happen to be the chairman of the education committee early on, but I will not say that I think we have done the best job that we could do.

And, then, finally, I think it should be a requirement in another project that this plan be done much sooner because I suspect that in the next year, we are supposed to finish our plan and debate it out, and God help us. We have a lot of work to get done in a very short period of time, and looking back, it would have been probably smarter. We were not mandated until just very recently to get that job done.

So, it would probably be better to, on a five-year study, do it around the third year.

Ms. SCHNEIDER. Mr. Chairman, I am not going to take my full time, but I would like to ask one other specific question.

In 1987, there was a study that found that three storm drain pipes in the parking lot of the Rhode Island Mall in Warwick was responsible for draining 65,000 pounds of solids, 290 pounds of hydrocarbons, and several hundred pounds of other contaminants into the Pawtuxet River, which, as you know, empties into Narragansett Bay.

Do you happen to know whether that situation was ever solved or anything is being done right now to prevent future situations from occurring on any new construction sites?

Ms. COXE. The problem has—I think that again illustrates how important it is that we connect land use decision-making with water quality decision-making and, indeed, often Save The Bay has spent a lot of time highlighting the major polluters of the Pawtuxent River only to find that the Mall parking lots are a real problem, and Route 95 is a real problem or one of the more significant problems.

No, that problem has not been solved yet.

Ms. SCHNEIDER. Okay. Mr. Chairman, I will give back the balance of my time, but I also would like to point out that we are honored to have joining us this morning the Director of the Environmental Protection Agency Research Lab for Ocean Pollution, Dr. Norb Jaworski.

Norb, hello, and thank you for your attendance here, and your enthusiasm to learn what the witnesses had to say, and we thank you for your presence here.

I have no further comments, Mr. Chairman.

Mr. FOGLIETTA. I thank you, Congresswoman.

I would like to ask Congressman Saxton if he has any questions of this panel?

Mr. SAXTON. Just two quick ones I would like to ask Ms. Coxe.

You talked a great deal about education, and we talked earlier about transfer of technology from those who are researching and learning about the problems, challenges and the solutions to them.

How important do you see that as your plan manifests itself? How big a part of your plan will that educational aspect of it be?

Ms. COXE. Well, I think Caroline mentioned that she believed that most of the recommendations of the project will get implemented, and I agree with her, but they are only going to get implemented if everyone from the Governor down to every zoning board in the State of Rhode Island is excited and enthusiastic about the recommendations, and the only way that they will become so is through a real solid education program.

So, I would have to say that in the next months, getting the plan done and getting people educated about the contents of the plan and happy about the contents of the plan is inherent.

Mr. SAXTON. I agree with you.

Almost without exception today, the witnesses have talked about the need for more money, and whether those more money decisions are made in Providence or in Boston or in Washington, D.C., the legislative bodies like ours that make those decisions more often

than not reflect the attitude of citizens they represent, and, therefore, I would suggest that one of the most important aspects of giving marine environment, the environment generally, are good educational awareness programs.

I think you are really on the right track with that.

I would like to ask Ms. Desrosiers. You mentioned something that I questioned a little bit, and that is—in fact, I questioned it quite a bit, and that is, the notion that somehow or other we can clean up Narragansett Bay through some dredging.

My experience with dredging is that we have always had to be very careful with the environment we dredge. I am a boater in my home waters and if there happens to be a bump that shows up in a water way in New Jersey, we almost surgically remove it, so that we do not interfere too much with the environment, and I guess the other thing that kind of bothers me about the idea of dredging is that it puts forth the notion that we can somehow flush our problems out into the ocean, and it is just not something that I find is an exceptional policy.

I would like it, if you would not mind reacting to that, and maybe Trudy could react to it as well.

Ms. DESROSIERS. Sure. Basically, we are not talking about the whole Narragansett Bay being dredged. We are talking about coves and harbors that are in desperate need of dredging, that have filled in over the years, which supply the marine industry with ample dockage for their boats.

What we mean by cleansing is not taking trash from the marinas and cleansing it out into the bay. We are talking about bringing fresh water into stagnant areas that are becoming more and more stagnant without the flow of the current coming up where it used to be, and we feel that by creating the deeper depths within the harbors the channels going in, and keeping the slips dredge to a happy medium, that that will just increase the flow, and the flow will bring in cleaner water with more oxygen and more vitality than just having it stay stagnant and not getting the flow that it used to get.

Ms. COXE. Three years ago, and you know this because you gave us the opportunity to come and talk to you about it, but Save The Bay with funding from the Environmental Protection Agency organized a conference of activists from around the country. It was the first time that people who work on coastal issues had ever met one another together, and we created an agenda for action and came up with five things. If we could only do five, that would really help save our bays.

One of the recommendations was that this country needs desperately aquafund programs, a program that would begin to identify the really serious contaminated sedimentation program problems, be they in the Great Lakes or be they in the Gulf or along the Atlantic or Pacific, and also begin to talk about the funding needs that might be required to correct the dredging spoil problems that does exist and it is creating some serious problems for this country.

Mr. SAXTON. Thank you, Mr. Chairman.

Mr. FOGLIETTA. Thank you.

Congressman Goss.

Mr. Goss. Thank you, Mr. Chairman.

Two quick questions. Trudy, you mentioned that you thought that it was going to be tough to get everything done you needed to get done within the time line.

Is it a question of the way we organized the operation, the program, in five years or is five years not enough for something of the magnitude of Narragansett?

Ms. COXE. I think that is an excellent question. I suppose it is a combination of both. Though I think that I am a patient person, I have to suspect that most Rhode Islanders who love Narragansett Bay, when we first started out, though that five years was much too much time.

I think that had we perhaps asked the questions faster and directed ourselves more clearly and in a more focused fashion, five years is fine enough. However, we tried to do almost everything with the Narragansett Bay Project, and I think that begins to create almost schizophrenia among us all.

I mean, we are just beginning to get ourselves back on the track. So, I suppose the best answer would be focus ourselves better and the time frame is fine.

Mr. GOSS. Ms. Cherkasky, are you an elected official or are you a member of the organization?

Ms. CHERKASKY. I am a staff person to the League of Cities and Towns.

Mr. GOSS. My question is very simple. I feel that all the testimony has come to the same conclusion, that the local government is going to have a very strong role to play. It is not just a dollar role, and my question to you is this, do you think the local governments around Narragansett Bay are ready to make the hard land use decisions that are going to be necessary in order to help to prevent future pollution?

Ms. CHERKASKY. They are going to need a lot of help. Not just financial, but technical assistance, and they are afraid often times of strong developer——

Mr. GOSS. Of course. Zoning fights, of course.

Ms. CHERKASKY. Excuse me?

Mr. GOSS. Of course. The zoning fights. We all understand that. That is what I am asking.

Do you think the backbone is there to see this thing through?

Ms. CHERKASKY. It could use some beefing up.

Mr. GOSS. Thanks.

Mr. FOGLIETTA. Congressman Machtley, the last question is yours.

Mr. MACHTLEY. I would like to commend all of the witnesses who have testified here, and to commend this panel and Claudine Schneider for her strong leadership role in the environment.

If there is one thing I hope we can all take away from here, it is the fact that Rhode Island is willing to do its part, but it does need help from the Federal Government to keep that beautiful body out there the same pristine body that my children and their children continue to enjoy nature's most remarkable resource, and I am very thankful for you coming, and I hope you will share the words with people back in Congress that we need your help.

Mr. FOGLIETTA. Thank you, Congressman.

I want to thank my distinguished colleagues, the panelists, and the audience for being here with us today. This is indeed an extremely important issue for our Committee. Your perspectives will certainly be taken into consideration as we formulate policy concerning the National Estuary Program in the future.

This is an extremely important issue for our Committee, and your perspectives will certainly be most helpful and taken into consideration.

Thank you all for being here. The Subcommittee on Oversight and Investigations is adjourned.

[Whereupon, at 12:05 p.m., the Subcommittee was adjourned.]

[The following was submitted for the record:]

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MEMORANDUM

TO: MEMBERS, COMMITTEE ON MERCHANT MARINE AND FISHERIES

FROM: THOMAS F. FOGLIETTA, CHAIRMAN, SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

DATE: JULY 25, 1989

RE: FIELD HEARING IN NEWPORT, RHODE ISLAND ON THE NARRAGANSETT BAY PROJECT AND THE NATIONAL ESTUARY PROGRAM

On Monday, July 31, 1989, the Subcommittee on Oversight and Investigations will conduct a field hearing on the Narragansett Bay Project of the Environmental Protection Agency's National Estuary Program. The hearing will begin at 9:00 a.m. in the Great Hall of Salve Regina College in Newport, Rhode Island. All committee members are invited to attend.

The Subcommittee will receive testimony on the progress of the Narragansett Bay Project and the overall status of the National Estuary Program. Invited witnesses include

representatives of the United States Environmental Protection Agency; the National Oceanic and Atmospheric Administration; the Rhode Island Department of Environmental Protection; the Massachusetts Department of Environmental Affairs; the Narragansett Bay Project; the Rhode Island Shellfishermen's Association; the Rhode Island League of Cities and Towns; the Rhode Island Marine Trade Association; and Save the Bay.

BACKGROUND

THE NATIONAL ESTUARY PROGRAM

History

Estuaries are waterways where fresh water from inland sources mix with salt water from the ocean. The blend of fresh and salt waters makes estuaries biologically productive, sustaining finfish, shellfish, migratory birds and other wildlife, submerged grasses, and microscopic marine life. Estuaries are increasingly in the public's attention due to their economic, aesthetic, and recreational value.

Population trends suggest that people are migrating to coastal areas, especially to estuarine areas, in vast numbers. This trend is placing a tremendous strain on the already taxed resources of the estuaries and the effects are becoming more visible, with increasing problems of coastal pollution (both point and non-point sources), declining catches in important commercial and recreational fisheries, and competition among user groups for different uses. It was with these issues in mind that Congress saw the need for comprehensive legislation to protect and restore the estuaries.

The response by Congress was the National Estuary Program which was amended to the Clean Water Act in the Water Quality Act of 1987 (P.L. 100-4/ Section 320). In creating the program,

Congress declared that the health and ecological integrity of estuaries are in the national interest. Congress identified long-term planning and management as the best methods for preserving these unique bodies of water. Simply stated, the goals of the program are for the protection and improvement of water quality, and for the enhancement of living resources.

The Priority List

Congress directed that certain estuaries be given priority consideration for inclusion in the National Estuary Program. Current members of the priority list include Buzzards Bay in Massachusetts; Long Island Sound in New York and Connecticut; Narragansett Bay in Rhode Island; Puget Sound in Washington; Albemarle-Pamlico Sounds in North Carolina; San Francisco Bay in California; New York-New Jersey Harbor in New York and New Jersey; Delaware Bay in Delaware and New Jersey; Delaware Inland Bays in Delaware; Sarasota Bay in Florida; Galveston Bay in Texas; Barataria Bay in Louisiana; Indian River Lagoon in Florida; Peconic Bay in New York; and Massachusetts Bay-Cape Cod Bay in Massachusetts. Legislation has been introduced in the 101st Congress to add Tampa Bay in Florida (H.R. 1063) and Casco Bay in Maine (H.R. 1189) to the priority list. Section 320(a)(1) of the Water Quality Act also provides for a process of "Gubernatorial" nomination. Several estuaries have been nominated through this mechanism.

Funding

The National Estuary Program receives federal funding from two sources. The "general fund" appropriations of $12,000,000 are authorized by section 320(i) of the Water Quality Act for each of fiscal years 1987 through 1991. Additional funding for the program is specifically authorized under section 205(l) also via a set-aside of 1.5 percent of "construction grants" appropriations. In the FY 1989 budget, $13,295,700 was authorized for the twelve

sites participating in the National Estuary Program. Of this amount, $4,705,000 came from the "construction grants" set-aside. In FY 1990, the EPA asked for total funding of $15,180,000, with $2,000,000 of the total coming from the construction grant set-aside. This increase accommodates the addition of four new proposed sites to the National Estuary Program.

Concept

The National Estuary Program has its roots in earlier experiences with the Great Lakes Program and the Chesapeake Bay Program. Building on these programs' successes, the National Estuary Program employs three of their more important concepts. First is the application of a phased process in the control and the abatement of pollution. This process involves identifying pollution problems, evaluating alternative solutions, and making recommendations to state and local governments. The second major point is the use of a collaborative problem-solving process. The goal of this aspect is to assure that all parties are actively involved in each phase of the program and, more importantly, that they are firmly committed to carrying out the particulars of the plan. Finally, the program employs a management system that is designed to produce results cost-efficiently with limited funding. This system is dependent on the ability to prioritize the immediate and long-term needs of the estuary.

The National Estuary Program falls under the auspices of the Office of Marine and Estuarine Protectio of the Environmental Protection Agency. For an estuary to be admitted into the program, it must first be nominated to the EPA Administrator by the governor of a state in which the estuary lies, either wholly or partially. The governor must include in the proposal why the estuary is of national significance, why there is a need for the estuary to be included in the National Estuary Program, the likelihood of success of the project, and an assessment of the current status of the estuary. If the estuary is selected, the

EPA Administrator is authorized to convene a management conference.

[Note. As an alternative to gubernatorial nomination, Congress has enacted particular estuaries for priority consideration in the National Estuary Program.]

Management Conference

The members of the management conference include the EPA Regional Administrator and often include representatives of other Federal agencies such as the National Oceanic and Atmospheric Administration and the Department of the Interior, state governments, local governments, affected industries, public and private educational institutions, and the general public. The conference is managed as a federal-state-local partnership and should be a forum for open discussion, cooperation and compromise that results in consensus. The emphasis of the conference is on establishing progressive phases for identifying and solving problems and employing a collaborative decision making process.

The management conference is further divided into four committees to address different concerns; they are the policy committee, the management committee, the scientific and technical advisory committee, and the citizens' advisory committee. The policy committee is the decision making body of the conference. This committee sets program goals and objectives and establishes priorities and direction for the estuary program. Responsibilities of the policy committee also include funding issues and balancing special interests with the needs of constituent groups. The management committee is in charge of the day-to-day operations of the conference. Working through consensus agreements, the management committee defines and ranks the problems of the estuary, produces reports, develops management strategies, and designs the Comprehensive Conservation and Management Plan (CCMP). Other duties include meeting

congressional deadlines, developing budgets and schedules, and supporting the activities of the other committees. The main objective of the scientific and technical advisory committee is to identify and define the estuary's environmental problems. Through its advice and guidance, the program decides what research, data management, modeling, sampling and monitoring efforts are best for the estuary program. The citizens' advisory committee's function is to include the public in the decision-making process and integrate public opinion and expertise into each program phase. The theory behind the citizens' advisory committee is that public support for implementation will be greater if the public has been active throughout the evolution of the program.

At the onset, the management conference must identify the problems of the estuary and from the many perspectives presented, select specific areas to investigate further. The conference strives to focus on and define the problems that affect the estuary system wide. A review and evaluation of the existing programs that protect the estuary are also undertaken at this time. The conference then performs a technical assessment (or characterization) to determine the state of the estuary and the reasons for its decline. This process generally occurs over a two to three year period.

The Comprehensive Conservation and Management Plan

From the information and data generated in these earlier stages, the management conference develops the Comprehensive Conservation and Management Plan (CCMP), which serves as the blueprint for restoring and maintaining the estuary. The management conference must formulate the CCMP within a five year period. The CCMP must include a summary of the characterization findings; an identification of the priority problems of the estuary; a statement of the environmental quality goals and objectives; the action plans for pollution control and resource management; and a series of supporting components such as public

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information, program integration, periodic review, evaluation, and redirection and the development of the implementation plan. The Comprehensive Conversation and Management Plan must be approved by the EPA administrator within 120 days of completion.

Following the formal approval, the CCMP is to be implemented by the regional, state, and local agencies identified in the CCMP. Implementation is to be funded through a federal/state cost sharing partnership. The federal share, awarded as grants by the EPA administrator, cannot exceed 75 percent of total costs. The remaining 25% share is to be picked up by the regional, state, or local governments. Since all of the estuary projects are still in their planning stages, CCMP implementation exists more in theory than in practice. However, as each estuary project reaches the end of its five year planning stage, implementation of the CCMP should be of particular concern to Congress.

THE NARRAGANSETT BAY PROJECT

History

Narragansett Bay has played a major role in the development, history, and economics of the State of Rhode Island. The Bay traditionally has supported commercial fisheries, shipping and commerce, hydropower-driven industries, and the oil industry. Ecologically, the estuary is still one of the most productive wildlife habitats and nature preserves on the East Coast. The beaches and waterfront areas of the Bay are also major tourist attractions and resort areas.

However, despite these beneficial commercial and recreational uses, Narragansett Bay has served also as a dumping ground. For the past 200 years, the Bay has routinely received domestic and industrial waste from municipalities, industries, and urban runoff. Since Narragansett Bay suffers from persistent but

diverse sources of pollution, it is difficult to simply categorize the Bay's ailments. As of 1987, there were 29 municipal dumpers and 145 industrial dischargers in the Bay watershed. The Rhode Island Department of Environmental Management has estimated that 18,602 of the Bay's 92,074 acres are bacteriologically polluted and thus permanently closed to shellfishing. (Shellfishing is a $15 million a year industry in Rhode Island.) Metals are also commonly discharged into the Bay from the electroplating process of the Rhode Island jewelry industry. High levels of copper, nickel, chromium, lead, mercury, zinc, and cyanide can be found in sediment samples throughout the estuary. Combined sewer overflows periodically close the Bay to shellfishing for seven days whenever one-half inch of rain falls in 24 hours. The urban waterfront areas are virtually a wasteland from years of direct sanitary, industrial, and thermal discharges and the influxes of untreated sanitary waste and urban runoff from sewer overflows. The estuary is also threatened by a proliferation of marinas and residential development. More recently, the offshore waters of the Narragansett Bay were further polluted with the over 250,000 gallons of number 2 fuel from the WORLD PRODIGY oil spill.

Narragansett Bay was originally admitted into the National Estuary Program, along with Long Island Sound, Buzzards Bay, and Puget Sound, in 1985. The EPA provided $4.4 million between 1985 and 1987 for research and environmental assessment of the Bay and for development of the Comprehensive Conservation and Management Plan to save the Bay. With the enactment of the Water Quality Act of 1987, Narragansett Bay became the sixth estuary officially designated under Section 320 of the Water Quality Act. The Narragansett Bay Project, as it is officially titled, is currently nearing the completion of its five-year planning stage. Implementation of the plan is to commence in January 1991. The Narragansett Bay Project received authorizations of $1.4 million in FY 1989 and is projected to receive at least as much in FY 1990.

Priority Problems and Management Philosophy

The Narragansett Bay Project has identified seven priority problems to be addressed in the restoration of the estuary: management of fisheries, nutrients, impacts of toxic contaminants, health and abundance of living marine resources, health risk to consumers of contaminated seafood, land use, and recreational uses. To assist in managing these concerns, the project developed a set of eight questions:

1. What are the goals of the public, user groups, and governmental agencies, and how are they incorporated into the management goals and strategies for Narragansett Bay?

2. What are the impacts of point source pollution on water quality of the Bay?

3. What are the impacts of nonpoint sources on the Bay water quality?

4. What are the impacts of water quality on the health of the living marine resources in the Bay?

5. What are the consumption levels of toxics and pathogens in fish and shellfish to which consumers are exposed? What are the risks to the public and are they acceptable?

6. How does sediment composition and contamination affect water quality (dredging, resuspension, etc.) and living resources in the Bay?

7. What are the present and future goals of recreation resource management for Narragansett Bay and how are they influenced by water quality?

8. In order to achieve the management goals identified for

Narragansett Bay, what management and regulatory structure would be most effective, how can implementation processes be structured most efficiently, and how can the system be evaluated for compliance with management goals?

This management approach to the priority problems helps the project maintain a focus on both planning and the subsequent implementation of the CCMP.

The Bay project takes an ecosystem approach to the study of the problems and development of action plans. The Narragansett Bay Project has established a stringent schedule to help meet the December 1990 deadline to complete the CCMP. Several of these deadlines are currently being reached including an August 1989 due date for a report on the status and trends of the priority problems and the identifying causes of environmental problems.

The Narragansett Bay Project is also willing to implement controls in advance of the CCMP. For instance, project has recommended that the state of Rhode Island begin promoting enforcement actions on discharge permit violations, integrating human health risk assessment work in regulatory activities, and supporting applications of combined sewer overflow under the Water Quality Act. The project is working also to expand and coordinate existing programs to be more effective in protecting the Bay and its resources.

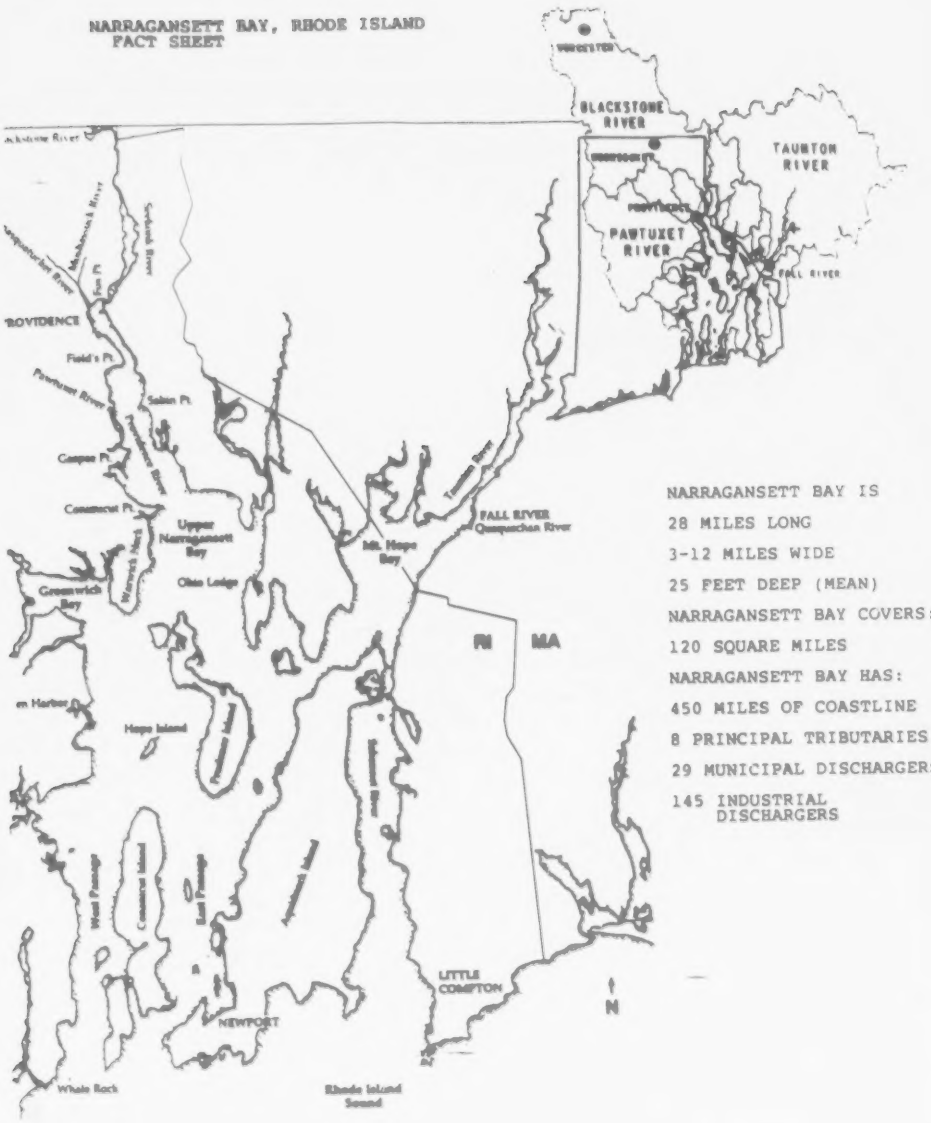
Issues

As the Narragansett Bay Project reaches the December 199 deadline, it is important for Congress to examine the progres. its Comprehensive Conservation and Management Plan. Have all th. milestones been met so far in the development of the plan? What difficulties have been encountered throughout the process? How have they been solved? What problems have not been solved as yet?

Specific questions also can be raised about the mechanics of implementation itself. How is the CCMP to be implemented? How will it be funded? Will the regional, state, and local agencies adhere to the arrangements of the plan over the long term? How will the plan be evaluated and reviewed in the years of implementation?

As other National Estuary Program projects reach the implementation stage, perhaps the more important questions for Congress to consider are what are the accomplishments and successes of the National Estuary Program and how are they to be measured? The Chesapeake Bay Program, which has been hailed as an exemplary management program, has not yet effected any changes in the Bay's ecology, but has succeeded in facilitating institutional programs and cooperation. Has the Narragansett Bay Program experienced a similar success? In light of this issue, Congress may need to define how it will measure success and the outcome EPA should seek.

NARRAGANSETT BAY, RHODE ISLAND
FACT SHEET



NARRAGANSETT BAY IS
28 MILES LONG
3-12 MILES WIDE
25 FEET DEEP (MEAN)
NARRAGANSETT BAY COVERS:
120 SQUARE MILES
NARRAGANSETT BAY HAS:
450 MILES OF COASTLINE
8 PRINCIPAL TRIBUTARIES
29 MUNICIPAL DISCHARGERS
145 INDUSTRIAL DISCHARGERS

STATEMENT
OF
VIRGINIA K. TIPPIE
DIRECTOR, NOAA ESTUARINE PROGRAMS OFFICE
OFFICE OF CHIEF SCIENTIST
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
U.S. DEPARTMENT OF COMMERCE

BEFORE THE

SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
COMMITTEE ON MERCHANT MARINE AND FISHERIES
HOUSE OF REPRESENTATIVES

NEWPORT, RHODE ISLAND

JULY 31, 1989

Mr. Chairman and Members of the Subcommittee:

Good morning, my name is Virginia K. Tippie. I am Director of the Estuarine Programs Office of the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce. I appreciate the opportunity to appear before your Subcommittee to review the progress of the Narragansett Bay Project (NBP) within the National Estuary Program.

NOAA has a long standing historical commitment to the Narragansett Bay. As a matter of fact, NOAA has been charting the Bay for the last 100 years. For approximately 20 years the Sea Grant Program, the National Marine Fisheries Service, and the Coastal Zone Management Program have been operating and funding a variety of marine environmental programs in the Bay. The Coastal Zone Management Program alone has provided over $9,000,000 to the State of Rhode Island for wise management of its coastal resources.

In 1985 EPA initiated the National Estuary Program in the Narragansett Bay to improve water quality and enhance living resources. The Program involves Federal and State agencies, academia, and citizen groups. Its purpose is to develop a comprhensive plan which will ensure an acceptable and sustainable level of environmental quality for the Bay. NOAA is working closely with EPA to integrate our efforts so that the Narragansett Bay Program will achieve its goals.

The NBP established seven priority issues for Narragansett Bay: (1) fisheries management; (2) nutrients and potential for eutrophication; (3) impacts of pollutants; (4) health and abundance of living resources; (5) health risk to consumers of seafood; (6) land-based impacts on water quality; and (7) recreational uses. An ecosystem approach is being used to address these issues and the accompanying problems. Presently, the Project's emphasis is being placed on expanding and coordinating existing programs among State agencies, governmental institutions, and academic researchers in order to apply research findings to the practical needs of managing the Bay and improving the environmental quality of its watershed.

NOAA is optimistic that through its support, the environmental quality of the Bay and the health of its resources will be preserved. I would like to tell you how NOAA's programs support NBP objectives.

3

Narragansett Bay Estuarine Research Reserve

An integral component in NOAA's stewardship of the Nation's coastal resources is the establishment of appropriate reserves to assist in the study and appraisal of coastal issues. In 1980 NOAA designated Hope Island, Patience Island, and the north end of Prudence Island as the Narragansett Bay Estuarine Research Reserve. The Reserve, which includes the Islands and the surrounding waters, out to a depth of 18 feet, provides diverse aquatic and terrestrial habitats, as well as nesting sites for numerous species of birds. The Reserve includes about 2,500 acres of land and water that serve as a field laboratory for scientists and students to study the natural processes of estuaries and the effect of human activities on natural systems. The Reserve, established for research and educational purposes, is designed specifically to address management questions essential to coastal and estuarine decision-making.

Since the Islands are located in the geographic center of Narragansett Bay, they provide an ideal setting for research and assessments of the health of the Bay and its change over time. NOAA and EPA have recognized the value of the Reserve in addressing Bay-wide issues defined through the National Estuary Program. Consequently, research proposals and projects funded through the Reserve are jointly reviewed by both agencies. The Rhode Island Department of Environmental Management (RIDEM) is the lead agency responsible for both managing the Reserve and administering the Narragansett Bay Project. The RIDEM ensures that both programs are

managed efficiently to address mutually supportive research and education objectives. Recently, the RIDEM appointed a new manager for the Reserve who previously worked for EPA on Narragansett Bay Project issues. He will be directly responsible for integrating the Bay Project and the Estuarine Research Reserve activities. He also will coordinate with NOAA components involved in coastal habitat planning, such as the Fisheries Service's habitat program and the Ocean Service's coastal management program.

Strategic Assessment Program

To assist these local environmental managers and others, NOAA is exploring coastal resource use in many parts of the country. Over the past several years, our Strategic Assessment Program has been compiling information and conducting regional/national resource use and environmental quality assessments of the Nation's estuarine and coastal waters. Within this program, a considerable amount of information has been developed for the Narragansett Bay Project; and we have been supplying this information to many analysts, researchers, and managers in the academic, public, and private sector communities from around the Bay. In fact, we are even now rescheduling some of our synthesis activities to complete work in the Narragansett Bay area ahead of schedule to help support local needs. I'd like to briefly mention some of our accomplishments:

From our National Coastal Pollutant Discharge Inventory, we have supplied information on pollution sources and loads to the Bay to:

the University of Rhode Island, The Conservation Law Foundation of New England, and the U.S. EPA Region 1. Our data indicate that there were 236 permitted point sources in the eight counties surrounding the Bay in the 1982 - 1985 period.

From this same inventory, a recent study completed on agricultural pesticide use in estuarine drainage basins indicated that almost 70,000 lbs. of pesticides per year were applied to crops in the Bay area in the early 1980s. Comparing this to agricultural pesticide use in 78 other estuaries around the country showed Narragansett Bay to rank about 40th with respect to the overall toxic burden these pesticides represent.

In January, we published an atlas on the Coastal Wetlands - New England Region. For the Narragansett Bay estuarine drainage area, 40 detailed Fish and Wildlife Service maps were digitized. Over 98,000 acres of wetlands have been identified, totaling about 13 percent of the land area of the estuarine drainage basin. Although Narragansett is only of moderate size compared to other New England estuaries, it ranks near the top with respect to wetlands acreage. By comparing those data to a NOAA Fisheries data base of applications to dredge or fill coastal wetlands, we also discovered that Rhode Island and its marine industries are poised for a growth spurt that could affect wetlands and waterways.

In March of this year, we completed an assessment of the condition of shellfishing waters along the east coast. Of the 106,000 acres of molluscan shellfishing waters in Narragansett Bay in 1985, about

70,000 acres (66%) were classified approved for harvest, 24,000 acres (23%) were prohibited, and 11,000 acres (11%) were conditionally-approved (i.e., closed when standards are not met, usually after rainfall). Primary causes for not meeting approved standards were a combination of sewage treatment plants, and combined sewers, industry, and urban runoff, although septic systems and boating activities were identified as lesser sources. We gathered this information by interviewing State officials responsible for classifying waters.

In our nationwide survey of publicly owned or managed recreation areas and facilities, we surveyed 29 agencies in five Rhode Island countries. We identified 617 sites comprising over 61,000 acres.

In our recently published Northeast Case Study, we estimated that Narragansett Bay receives about 4,500 tons per year of nitrogen and about 1,800 tons of phosphorus from all sources of pollution. Over half of the nitrogen and almost 90% of the phosphorus is estimated to be discharged by wastewater treatment plants. Stormwater runoff from urban areas is also a significant source of nitrogen discharge into the Bay. Based on its physical and hydrologic characteristics, the Bay is estimated to be moderately susceptible to inputs of dissolved pollutants.

Just recently, we have agreed to modify the schedule of our nationwide Estuarine Living Marine Resources (ELMR) project to support the Narragansett Bay Project. NOAA will compile distribution, abundance, and life history information for the

target species identified in the NBP based on the ELMR framework. The joint study between NOAA and NBP will provide essential information for the efficient development of research studies and management regimes for Narragansett Bay. We have also agreed to begin a series of discussions with the Bay Project on Geographical Information Systems and how they can be used most effectively.

National Status and Trends Program

The identification of changes occurring over time are important to the effective management of our coastal resources. The NOAA National Status and Trends (NS&T) Program began in 1984 when the Benthic Surveillance Project initiated annual collection of sediments and bottom-dwelling fish at about 50 coastal and estuarine sites around the United States. In 1986, the program expanded when the Mussel Watch Project began to collect annual samples of bivalve mollusks (mussels and oysters) at about 150 nationwide sites. Samples from both projects are analyzed to determine the concentrations of a suite of organic and inorganic contaminants; the fish are also examined for evidence of contaminant-induced disease conditions. The NS&T database provides a national perspective on contamination in the U.S. coastal zone and, because the samples are collected annually, is beginning to develop information on temporal trends in contamination. As a word of caution, this should not be understood as suggesting that the levels of toxic contamination are such as to signify a threat to human health. The NS&T Program is not presently designed to

evaluate human health threats. It is very difficult to interpret the data obtained in terms of significance to human health.

In Narragansett Bay, there is a Benthic Surveillance Site in the center of the lower bay and three Mussel Watch sites, at Mt. Hope Bay, Dutch Island, and Dyer Island. The Mt. Hope Bay site has only been sampled for sediment because no mussels have been found there.

Although from a national point of view, contamination is generally high in the Northeast, only a few contaminants have been found at relatively high concentrations in Narragansett Bay. Among the few, sedimentary tin concentrations are especially obvious as these concentrations were found to be in the top 10% nationally at all four sites in the Bay. Individual Narragansett Bay sites also showed relatively high sediment concentrations of mercury, silver, and polycyclic aromatic hydrocarbons (PAHs). In the biota, only the lead levels in mussels from Dyer Island showed relatively high values on a national basis. Histological examination of fish from the Benthic Surveillance site showed no evidence of contaminant-induced pathological conditions.

Rhode Island Sea Grant Program

The Rhode Island Sea Grant Program has worked closely with the EPA Narragansett Bay Program since the latter's inception. Detailed programmatic coordination has been achieved, in part, through the inclusion of the sitting director of the Narragansett Bay Program on the Rhode Island Sea Grant Executive Committee. The Committee

advises the Sea Grant Director on research and education priorities, assists in the review of proposals submitted for funding, and works with members of the university community to develop cooperative projects. The result has been numerous jointly-funded and complementary research, education, and outreach efforts that have addressed aspects of all seven priority Narragansett Bay issues that I mentioned at the opening of my statement.

Recent Sea Grant research efforts have assisted in development of models of water circulation in Narragansett Bay and adjacent Mt. Hope Bay. These have been integrated into the Narragansett Bay Program's water quality models. Other studies have examined aspects of pollution of the Bay by sewage wastes, nutrients, toxic metals, and petroleum hydrocarbons, and have investigated enforcement and compliance in the Bay's hardshell clam fishery.

Understanding the functioning of the Bay's rich biological communities has been a high priority of Sea Grant research. Of special concern have been the growth, survival, and food habits of winter flounder populations in the Bay, the role of predation in benthic communities, and studies of the massive "brown tide" that affected portions of the east coast, including Narragansett Bay, beginning in the summer of 1985. The "brown tide" was caused by the bloom of a previous undescribed species of microphytoplankton

and impacted scallop and mussel stocks in the Bay. In the fall of 1988, the Rhode Island and New York Sea Grant Programs co-sponsored a major international symposium on microalgal blooms.

Other topical research has included comparative studies of estuarine environmental quality and the governance of estuaries. These investigations assembled expertise in environmental science, economics, and the social sciences to examine relationships among public policy formulation, estuarine use, and estuarine environmental quality. Narragansett Bay was the first of six sites to be studied around the country.

Rhode Island Sea Grant and the Narragansett Bay Program have developed strongly with regard to outreach and educational efforts. Along these lines, the Sea Grant Program has sponsored a public education project entitled the "Narragansett Bay Classroom," and recent Sea Grant interpretive publications have included the release of an updated history of Narragansett Bay, entitled Narragansett Bay: A Friend's Perspective, and an examination of the Bay and its setting, entitled An Overview of Narragansett Bay.

NOAA/University of Rhode Island Project

Cooperation and communication with concerned groups are critical theme's in our collective ability to protect our coastal resources. On this subject, I would like to tell you about a new and exciting project proposal that NOAA has underway with the University of Rhode Island and the NMFS Narragansett Laboratory. We have

discussed with representatives of the University the establishment of a Northeast regional center for distribution of environmental data. NOAA would establish a communication link to provide routine access to environmental data through an interactive computer system for analysis of critical data to be used to address a variety of environmental problems. The Narragansett Bay Program would be able to tap into this communication link. I believe cooperative projects such as this will assist in attacking the pervasive environmental problems facing our coastal areas.

Hazardous Material Spills

Often, the environmental threats to Narragansett Bay are very visible to the public. A recent example is the June 23rd grounding of the Greek flag vessel, T/V World Prodigy, and the subsequent release of 300,000 gallons of toxic diesel heating oil at the mouth of the Bay. NOAA personnel responded, and took-on two major roles in the clean-up and assessment effort.

First, NOAA acted on behalf of the Secretary of Commerce as a Federal trustee for natural resources in coastal and marine areas pursuant to the Clean Water Act and the Comprehensive Environmental Response, Compensation, and Liability Act. In this capacity, NOAA staff have met with representatives of the Department of the Interior and the State of Rhode Island -- the other two co-trustees in this incident -- to determine the extent of natural resource injuries caused by the spill, and help assess any natural resource damage claims against the spiller.

Second, NOAA provided scientific support coordinators to the Coast Guard On-Scene Coordinator, sending five people from its Hazardous Materials Response Branch to the spill scene. These scientists provided graphic trajectory models predicting the movement of the oil, identified sensitive environmental areas that might be affected by the oil, recommended protective measures, and helped evaluate the shoreline cleanup. National Marine Fisheries Service Scientists were also active, sampling biota and water inside and outside the spill.

Coastal Zone Management Act (CZMA)

The protection and management of coastal resources has been, and continues to be, a high priority. The Coastal Zone Management Act (CZMA), administered by NOAA, was created to provide a comprehensive management umbrella for the beneficial use, protection, and development of the resources of the Nation's coastal zone. Coastal management was conceived as a voluntary program that States would undertake in partnership with the Federal Government. The basis for this partnership is a Federally-approved State Coastal Zone Management Program.

Since May 1978 when the Rhode Island Coastal Resources Management Program (CRMP) was approved, major efforts have been taken to improve the State's efforts to better manage land and water activities located within and affecting the State's coastal zone. The Rhode Island program has initiated a harbor management effort that addresses land-use and harbor-use as it affects water quality.

13

A noteworthy accomplishment by the CRMP is the adoption in 1984 of a Special Area Management Plan (SAMP) for Rhode Island's Salt Pond Region which has sustained a tremendous amount of growth between 1950 and 1980. The SAMP, which is the culmination of a comprehensive joint effort by NOAA's Sea Grant College Program at the University of Rhode Island and the Rhode Island CZM program, and other Federal, State and local agencies and private groups. This effort has eliminated the fragmented regulatory and planning process related to decisions along the Salt Pond area and has created a greatly enhanced management framework for making resource management decisions. A unique feature of the plan is the establishment of a process whereby permit decision-makers consider the whole ecosystem, not individual parcels, when making development decisions.

In 1988, the Salt Pond plan was incorporated into the State's Federally-approved CZM program. To date, all three towns located around the Pond have revised their zoning ordinances based on the State's Department of Environmental Management's upgraded standards for septic systems in the Salt Pond area. I truly believe that the experience of developing the Salt Pond plan can serve as a model for the Narragansett Bay Project.

NOAA/EPA/NEP Relationship

Federal agency cooperation is essential for the success of the Narragansett Bay Project. The National Estuary Program (NEP) was established in the Water Quality Act of 1987 to develop and

implement plans to protect the integrity of nationally significant estuaries, such as Narragansett Bay, threatened by pollution, development or overuse. The main emphasis of the NEP is to strengthen current efforts and develop comprehensive approaches to waterbody management.

In turn, the CZMP's primary focus is on coastal management throughout the State coastal zone, and must balance the competing uses of coastal resources. It is in this area that NOAA's CZM program can make a significant contribution to cooperative management effort in estuaries such as Narragansett Bay. In fact, Rhode Island's CZMP Director sits on the NBP Management Committee.

Although the CZMA is broader in scope, both the NEP and CZMA are focused on the protection of coastal resources. EPA and NOAA programs seek to ensure that population growth and corresponding development occurs in an environmentally sound manner. There clearly exists a close relationship between the Coastal Zone Management Program and the National Estuary Program. NOAA and EPA have entered into an memorandum of understanding to ensure coordination of the two programs. The major agreement is that Comprehensive Conservation Management Plans (CCMP's) for each national estuary will be incorporated into the appropriate State coastal zone program.

15

SUMMARY AND RECOMMENDATIONS

In summary, I would like to say that the the Narragansett Bay Project is a worthy program which is achieving a modicum of success. Complete success can only be realized through strong cooperation of all Federal, State, and local agencies, academic research institutions, industry and the citizenry. I would like to offer several recommendations which I think would strengthen the Narragansett Bay Project.

First, a true measure of success of the Narragansett Bay Project will be how well the CCMP addresses the key problems that affect water quality and living marine resources. The CCMP should be completed as quickly as possible to provide us with a basis to evaluate how effectively the NBP addresses issues of improved water quality, living marine resources and the public's access and use of the coastal resources.

Second, all provisions of the NOAA/EPA agreement should be implemented when the CCMP is completed. This will result in incorporation of the CCMP into the Federally approved Rhode Island Coastal Zone Program. As part of the State Program, all sections of the Federal Coastal Zone Management Act will apply, including the periodic Section 312 review to assure implementation and compliance.

Third, effective implementation of the CCMP will require active and dedicated support of the Rhode Island Coastal Program. For this

reason, consideration should be given by EPA and the Rhode Island Department of Environmental Management to making the State Coastal Zone Program an equal partner on the NBP Policy Committee.

In conclusion, I want to reaffirm NOAA's commitment to continuing scientific support of the NBP, the environmental quality of Narragansett Bay and the health of its resources will be preserved for generations to come. NOAA will continue to monitor, conduct research, assess, and assist in managing the Bay to reverse the variety of adverse impacts such as the declining resources, degradation of water quality, and threats to its overall health. The Department of Commerce strongly urge the State of Rhode Island to continue its initiative and resource commitment to preserve and protect their estuary. The Bay is a national resource.

This concludes my remarks Mr. Chairman. I will be glad to answer any questions you might have.

STATEMENT OF
PAUL G. KEOUGH
DEPUTY REGIONAL ADMINISTRATOR, REGION I
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
COMMITTEE ON MERCHANT MARINE AND FISHERIES
U.S. HOUSE OF REPRESENTATIVES

NEWPORT, RHODE ISLAND

July 31, 1989

Good morning. I am Paul Keough, Deputy Regional Administrator of the Environmental Protection Agency's (EPA) Region I office. Our jurisdiction includes Rhode Island and the other New England states. I appreciate the opportunity to discuss with you EPA's National Estuary Program (NEP) and the Narragansett Bay Project (NBP) in particular.

Our estuaries and oceans are vital resources, providing habitat for marine resources, abundant fishing grounds, and significant recreational opportunities. However, the Nation's coastal waters are facing challenges. Pollution affects our coastline and our marine resources. Recent events such as the World Prodigy oil spill on June 23rd in Narragansett Bay, the reappearance of medical wastes in New England waters, and the closure of some of our beaches and shellfishing areas this summer because of pollution problems, are reminders of the ongoing problems that are degrading our coastal environment. With the majority of our nation's population living within an hour's drive

of the coastline, including the Great Lakes, the nature of these problems is considerable.

A report released in December of 1988 by a Chesapeake Bay Program panel examined the consequences of the projected 20% increase in population in the Chesapeake watershed by the year 2020. The panel concluded that the existing management of growth and development is inadequate to protect coastal waters now, much less in 30 years. As impacts from coastal development continue to increase, the traditional focus of regulatory agencies on point source discharges needs to be broadened in scope to address non-point impacts and land use practices.

As a result of the increased concern for coastal waters, legislation has been introduced in Congress intended to provide federal, state, and local governments with the authority and resources to better address coastal problems. EPA has not yet had time to develop formal comments on these legislative proposals, and thus cannot address specifics of the proposals at this time. However, the general goal of these proposals is the same as EPA's goal: to protect and restore the environmental quality of the Nation's estuaries and coastal waters.

In response to development in coastal areas and its impact, EPA has developed an internal National Coastal and Marine Policy (NCMP). The policy established goals and specific objectives to

ensure recreational uses of our beaches and shoreline, pollution controls to ensure protection of living resources and their habitats, pollution prevention, land use and growth management in cooperation with the Coastal Zone Management and local and State agencies, improved coastal science, and international efforts. Implementation of this policy will be accomplished by adjusting agency-wide priorities and goals to focus agency actions and resources on coastal programs and research. An emphasis will be placed on building partnerships among Federal agencies, State and local governments, interest groups, and the public. Our Administrator, Bill Reilly, is in the process of working with other agencies such as NOAA, the Coast Guard and the Department of the Interior to develop a coherent national ocean protection policy.

The policy is currently being implemented through the Agency's geographically-focused programs, the Near Coastal Waters Program and the National Estuary Program under the Clean Water Act and the Ocean Dumping Program under the Marine Protection Research and Sanctuaries Act and the Ocean Dumping Ban Act. These programs emphasize the importance of taking action now where specific problems are identified so as to achieve environmental results, even while we build scientific and management capability to tackle other issues. Region I has taken the lead in developing a new Near Coastal Waters Strategy for New England. Problems in coastal waters have been identified, and

pilot pollution control projects are being developed for Waquoit Bay on Cape Cod, Massachusetts, Casco Bay, Maine, the Housatonic River and Norwalk, Connecticut, and the Blackstone River in Rhode Island and Massachusetts.

In 1985, recognizing the need to focus on coastal and ocean issues, EPA created the Office of Marine and Estuarine Protection. Congress directed EPA to establish the National Estuary Program in 1985 and the NEP was given statutory authority under the 1987 amendments to the Clean Water Act. The purpose of the NEP is to restore and maintain the ecological integrity of estuarine and coastal areas by protecting and enhancing water quality, living resources and habitats. The program builds regional, State, and local capability to address coastal problems and demonstrate various approaches that may be applied to estuaries and coastal waterbodies nationwide. Four estuaries, Narragansett Bay, Buzzards Bay, Long Island Sound, and Puget Sound, were originally selected to participate in the NEP. Since then, the NEP has expanded to include 12 estuaries, and our FY 1990 budget request includes funding for four additional Conferences.

EPA intends to transfer technology and lessons learned from the National Estuary Program to other estuaries and coastal waters. The following discussion will highlight some of the noteworthy features and major successes of the NBP. It should be

noted that many of these features are characteristic of all NEP programs.

The Narragansett Bay Project has taken an innovative approach to solving pollution problems. Rather than the traditional source-by-source approach, the Narragensett Bay Project is taking a basinwide, cross- media approach to environmental management and pollution control. Developing an integrated regulatory response that evaluates all the pollution issues simultaneously enables us to put the problems in priority on a regional watershed basis, allowing the maximum benefit from available funds. Through the NEP, a framework has been established for EPA, local and state governments, and other federal agencies to work together to address coastal problems in an integrated multi-media fashion. The emphasis will be on cleaning up existing pollution problems, as well as implementing pollution prevention measures.

The close cooperation and collaboration between regulatory agencies at the federal, state and local levels required for this type of management approach is a key characteristic of the estuary programs. This partnership, I believe, has been one of the Narragansett Bay Project's biggest successes. Federal agencies that are participating in the Narragansett Bay Project include EPA, NOAA, the Food and Drug Administration (FDA), the U.S. Geological Survey (USGS), and the Army Corps of Engineers

(COE). Within NOAA, the Narragansett Bay Project works closely with the National Marine Fisheries Service (NMFS), Sea Grant, and the Coastal Zone Management (CZM) Program. Key Rhode Island state and local agencies and groups also participate in the management of the Narragansett Bay Project. The strong commitment on the part of Governor Edward DiPrete and the State of Rhode Island to the Narragansett Bay Project has played and will continue to play an important role in its ultimate success.

The Narragansett Bay Project program has been structured to include the above-mentioned agencies in the decision-making process. In addition, because EPA recognizes the importance of citizen participation in building consensus and support for the comprehensive planning and management process, user groups, environmental groups, academia, and others have been included in the Management Conference. The Narragansett Bay Project has the active involvement and cooperation of various key groups on its several committees. Local citizens are helping shape the measures that will help guarantee the protection and preservation of Narragansett Bay.

Another important aspect of the Narragansett Bay Project is the role of scientific research and information. The first years of the NBP have involved extensive scientific study to fully evaluate and define the pollution problems in Narragansett Bay. This information is being used to develop the management plan and

will provide a solid, scientifically credible basis for decision-making. The incorporation of science into the management process is an important component of the program.

Each National Estuary Program has the following four phases:

1) establishment of the decision-making framework;
2) characterization and definition of the problems;
3) development of the Comprehensive Conservation and Management Plan (CCMP);
4) implementation of the CCMP.

The Narragansett Bay Project is currently completing research being conducted under Phase 2 and is involved in Phase 3. An outline of the CCMP, and detailed outlines of some chapters, have been completed and the first chapter (Pathogens) is nearing completion. The CCMP is scheduled for completion by December of 1990. The CCMP will contain a description of each problem, specific recommendations for abatement strategies, and an action plan for implementation of the recommendations which will include potential funding sources and a schedule.

Phase 4, implementation of the CCMP recommendations, will occur after the CCMP completion. However, some identified solutions have already been implemented through Priority Action Plans with funding provided by EPA. The Hazardous Waste Reduction Project and the Land Management Project are being carried out by the Rhode Island Department of Environmental

Management and have made significant progress in the short time since being established. Innovative programs like this will be needed to address problems that existing regulatory programs are ineffective in solving.

The recommendations contained within the CCMP will be comprehensive, specific, and detailed. They will involve a wide range of solutions and will vary in scale and cost. The CCMP will also identify financing sources for implementation of the recommendations. The Narragansett Bay Project is conducting an EPA-financed study identifying and evaluating alternative and innovative sources of financing for Rhode Island. Several case studies will be undertaken to test the feasibility of these sources.

Over the years, EPA has spent more than $141 million to control point sources that directly discharge to Narragansett Bay and another $9 million on cleaning up combined sewer overflows around the Bay. To clean up tributaries that flow into Narragansett Bay, Rhode Island communities have received an additional $134 million to control inland point source discharges.

A long-term monitoring program that is being designed by the NBP will be implemented by the State of Rhode Island. The state is required to produce a progress report every two years

documenting the status of implementation and the results of the monitoring program. The purpose of the monitoring is to 1) establish baseline conditions; 2) assess improvements after implementation of NBP recommendations; and 3) provide continuing information for decision makers. It is critical to document water quality and other improvements that are attributable to the NBP management plan. It is also critical to document that these investments are worth making.

Progress is being made through innovative approaches to solving the Nation's coastal problems-such as the NBP. By working cooperatively with states and other federal agencies, by incorporating scientific information into decision-making, and by involving the public in the management process, we can effectively tackle the problems facing our coastal waters and protect them for the future.

NARRAGANSETT BAY PROJECT

Testimony to the House Committee on
Merchant Marine and Fisheries
(Prepared by C.A.Kaip, Narragansett Bay Project)
31 July 1989

Table of Contents

	page
Overview of Narragansett Bay Water Quality	1- 5
Review of H. 2647 (" Coastal Resources Protection Act")	6 -7
Review of S.1178 ("Marine Protection Act")	8 - 10
Review of S.1179 ("Comprehensive Ocean Assessment and Strategy Act")	11 -13
Review of S.587 ("Marine Research Institutes")	14- 15

Appendices

Outline of Narragansett Bay Project "Comprehensive Conservation and Management Plan"

Annotated bibliography of Narragansett Bay Project - funded studies (1985-88)

Narragansett Bay 'Fact Sheet'

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Testimony to the House Committee on Merchant Marine and Fisheries (C.A.Karp, Narragansett Bay Project)

I have been asked to comment on the magnitude and extent of coastal pollution in Narragansett Bay and on the ability of the Narragansett Bay Project to recommend and/or implement corrective actions. I have also included my view of the effect that the Congressional 'Coastal Pollution Agenda' might have on Rhode Island's ability to protect Narragansett Bay water quality and natural resources.

In many respects, Narragansett Bay is the 'Everyman' of American estuaries. Major urban and industrial centers are spread along the rivers tributary to the Bay and are, like the city of Providence, concentrated at their confluence with the estuary. As the cities flourished, the population sprawled along the neighboring coastline, inevitably followed by highways, sewage treatment plants and businesses. This history and pattern of development, which is typical of the entire northeast if not the entire country, has generally produced a legacy of fouled water, contaminated sediment, diminished fisheries and wildlife habitat, and an uncertain future.

Narragansett Bay, again like many of the northeast estuaries, has lost most of its anadromous fisheries because of upstream fresh water impoundments and diversions, overfishing and pollution. Although the Bay still supports a major native shellfishing industry (revenues estimated at $17 million in 1988), several species are no longer commercially harvested and approximately 30% of the Bay is permanently closed to shellfishing due to sewage and combined sewer overflow (CSO) pollution. Even if the sanitary discharges were controlled, it is uncertain whether the shellfish beds should be re-opened to harvesting because of potential human health risks posed by shellfish tissue burdens of metal and organic contaminants. The urban waterfront, although in the process of being reclaimed, is still largely a wasteland that receives direct sanitary, industrial and thermal discharges, not to mention untreated sanitary waste and urban runoff from combined sewers. The coast remote from urban areas is increasingly characterized by a proliferation of marinas and residential development, accompanied by loss of public access and dirty beaches. Although serious water quality impacts are largely confined to the coastal waters immediately adjacent to the sources of chronic pollutant inputs, Rhode Island's offshore waters are not immune

from major pollutant releases as last summer's plague of medical debris and the 'World Prodigy' oil spill of June 23d have amply illustrated.

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The complexity of Narragansett Bay's water quality problems and, especially, the complexity of achieving solutions, can be easily comprehended by looking at the physiography, demographics and present governance of the Bay.

First, the watershed of Narragansett Bay encompasses 1,820 square miles -- 60% of which lies in the State of Massachusetts, including the headwaters of the Taunton and Blackstone rivers. These two rivers drain the cities of Worcester and Fall River, Massachusetts. See Figure A (map of Narragansett Bay watershed with population distribution), attached. [Note that Massachusetts is not a signatory to the Narragansett Bay "Designation Agreement" signed by Governor DiPrete in March 1988.]

Second, the Blackstone and Taunton River corridors formed the heart of the "Industrial Revolution"; consequently, these rivers are sources of historically contaminated, "in-place" sediments deriving from the textile, dye-works and metal finishing industries. The entire northern portion of the watershed, which includes the cities of Worcester, Fall River, Woonsocket, Providence and East Providence, continues to be an industrial/ manufacturing center with a heavy concentration of pharmaceutical, textile and metal-finishing companies, not to mention energy generating facilities and landfills. Some of these industries discharge directly to surface waters; others produce leachate which percolates into groundwater and exchanges with surface waters.

In addition, based on the 1980 U.S. census, approximately 800,000 people are served by publicly-owned sewage treatment facilites that ultimately drain treated sanitary waste into the Providence River. An additional 100,000 people living in the Providence River drainage basin are served by on-site septic systems, raising the possibility of an additional source of nutrient inputs from failed systems. Rhode Island has 87, as yet, untreated CSOs which discharge a mixture of raw, untreated sewage and storm runoff to the Seekonk and Providence Rivers. The city of Worcester has a single major CSO which provides an unknown level of treatment. Fall River has an additional 19 CSOs, including the infamous Quechechan River which appears to be the single largest source of fecal pollution to Mount Hope Bay.

Third, based on projections by the Rhode Island Division of Statewide Planning, Rhode Island's resident population is expected to grow by approximately ten percent (10%) to 1.1 million people by the year 2000 ("Land Use: 2010"; R.I.Division of Statewide Planning, 1989). This figure does not account for the enormous transient and largely seasonal influx of tourists to Rhode Island who also exert pressure on existing municiapal water supply and sewage treatment facilities. These figures also do not adequately reflect the surge in coastal development over the past five to ten years that resulted from the relatively robust national and state economies.

Fourth, Rhode Island, like virtually every state, is served by a sometimes bewildering array of federal, state and local agencies, each of which exercises some juridiction over environmental matters critical to the governance of Narragansett Bay. Not surprisingly, these agencies often share regulatory jurisdiction over matters affecting Narragansett Bay although often from quite different, and sometimes irreconcilable, mandates and philosphical perspectives.

Progress has been made in spite of this picture. On the one hand, because of Rhode Island's population density and distribution, its history of industrial development and environmental activism, and the Bay's physiography, Narragansett Bay simply does not have the same magnitude of water quality problems as other coastal areas. On the other hand, data compiled from various sources suggest that programs initiated pursuant to the Clean Water Act such as mandatory secondary sewage treatment and the industrial pretreatment program, the phase-out of leaded gasoline and the prohibition on the domestic manufacture of PCBs have, in fact, measurably reduced the pollutant burden on Narragansett Bay. Regulatory controls on development in tidal and nontidal wetlands appear to have impeded the wholesale loss of these valuable wildlife and nursery habitats. Recent State initiatives such as the acquisition of open space, mandatory recycling and hazardous waste reduction programs are expected to further reduce pollutant inputs.

The major challenge for the Narragansett Bay Project is to recommend corrective actions that build upon existing programs wherever possible. The "Comprehensive Conservation and Management Plan" ("CCMP") will, of necessity however, go beyond existing programs where necessary to achieve stated water quality and resource goals for the Bay. For example, it is quite clear that a comprehensive management plan for Narragansett Bay must include the entire watershed, including a review of land use practices within the watershed. The plan must address nonpoint pollution sources such as failed septic systems, marinas and ports, and highway, urban and storm runoff in a systematic way. The plan must also address the adequacy of conventional wastewater treatment technology and consider alternative treatment practices. Finally, the plan must address the governance of Narragansett Bay in terms of distribution of regulatory authority, as well as propose reasonable financing strategies for achieving desired results. It is already evident that many of the state's water quality and resource objectives cannot be met without federal assistance, whether in the form of statutory expansion of existing authority, technical guidance and/or money.

The federal government can significantly improve the states' ability to protect coastal and estuarine waters in a number of ways. From a policy perspective, formal federal recognition that coastal and estuarine waterbodies cannot be adequately managed or protected without managing the watershed would establish an important principle for water quality management agencies to

adopt. In this regard, state and local governments need national guidance about appropriate land management practices in the coastal zone. (The Coastal Zone Management Act already provides a vehicle for producing such guidance.) A systematic review of federal activities that affect coastal waters is also needed. For example, highway runoff is a major contributor of pollutants such as lead, petroleum hydrocarbons and polycyclic aromatic hydrocarbons. Federal Highway Administration grants to states could, and should, be conditioned on use of 'best management practices' to control and treat runoff.

The states also need technical guidance in a number of areas. Such areas include the development of numerical marine water, sediment and biological/ toxicological criteria; research and development re. alternative waste treatment and disposal technology; development of uniform standards for the design of monitoring programs, including standards for data management; promulgation of federal limits re. seafood tissue burdens of metals and organic contaminants. In addition, reliable data are needed regarding the magnitude of atmospheric inputs of pollutants; the origin, transport and control of floatables; human health risks associated with seafood consumption; the relationship between algal blooms and anthropogenic inputs of nutrients; and economic losses attributable to degradation of marine waters.

The need for federal financial assistance can easily be illustrated. A consultant hired to help design Rhode Island's State Revolving Fund recently estimated that the State will need between $800 million and $1.5 billion over the next twenty years to finance known capital improvements for existing publicly owned treatment works (POTWs) that are necessary to keep them operating at presently required levels of treatment. (This figure includes $250 million as the estimated cost of implementing, as yet undefined, nonpoint and estuarine controls.) The State presently has $135 million in authorized wastewater bonds, and plans to sell an additional $80 million in the next five years, leaving close to a $600 million shortfall. In summary, the elimination of EPA's Construction Grants program clearly undermines the state's ability to manage and protect Narragansett Bay.

In conclusion, Rhode Island, like many other coastal states, will require substantial outlays of money simply to maintain present levels of wastewater treatment using conventional treatment technologies. In order for shellfish beds to be re-opened, new sewage disinfection practices, CSO elimination, sewer extensions, limits on coastal development and general nonpoint source controls may also be required. A virtual revolution in land management philosophy and practice will be required to protect remaining wildlife habitat and indigenous marine and marine-dependent species. Given the financial and social costs associated with protecting coastal waters, the following

questions should be addressed regarding the appropriate balance between environmental protection and use of marine and estuarine waters:

- Are marine and estuarine waters to be protected because they represent part of the 'public trust', a resource to be protected for the benefit of the entire nation? Or, should coastal waters continue to be treated as a 'commons' and continue to be subject to the "tragedy of the commons"?

- If the coastal waters and natural marine resources are considered to be part of the 'public trust', should the public pay for their restoration and protection? Or, should the users/polluters pay for the privilege and license to impair public use of public waters? If the purpose of restoration is to preserve established uses of coastal waters, should the public pay at all?

- How clean is clean? Should the nation's coastal waters be clean enough to support healthy shellfish populations, or clean enough for shellfish harvesting, or merely clean enough not to offend?

The House and Senate bills included as part of the Congressional "Coastal Protection Agenda" have attempted to address all these issues, but from slightly different points of view. My evaluation of Representative Studds' bill (H. 2647) and Senate bills 1178,1179 and 587 is presented on the following pages. I have attempted to review these bills in terms of their potential effect on the Narragansett Bay Project's ability to draft, and Rhode Island's ability to implement, a "Comprehensive Conservation and Management Plan" for Narragansett Bay. I have also commented on the national policy implications of the proposed legislation, where appropriate, and suggested additional measures that would, in my opinion, assist the coastal states in the colossal task of protecting and reclaiming the nation's coastal waters.

H. 2647 (Representative Studd's proposed "Coastal Resources Protection Act of 1989")

There are several key elements of this bill that will hopefully find their way into the "Congressional Coastal Protection Agenda" . The key provisions include:

1) Section 203 (b)(3 - 5). The system-wide waste load allocation of point and nonpoint source inputs is by far the best approach to solving marine water quality problems. The idea of "tradeable discharge credits" is one of the best features of Maryland's Critical Areas Program and should be widely institutionalized. This approach allows for measured growth while placing the burden on planners to offset increased point source discharges with nonpoint source reductions. [Note that Maryland has developed some simple formulae for calculating such offsets.]

2) Section 204. This is the only bill that directly provides for protection of 'outstanding resource waters' and recognizes unique ecological, habitat and aesthetic characteristics as important attributes of those waters.

3) Section 301. Again, this is the only bill that directly acknowledges the relationship between coastal land use and protection of marine and estuarine resources. It is extremely important that this principle be formally recognized and stated at the federal level because it will ultimately promote watershed-scale, as opposed to facility-scale, planning. In addition, the proposed amendments to the CZMA represent a conceptually important re-focussing of the CZM mission -- as a practical matter, many state CZM agencies have historically appeared to view their mission as coastal planning in order to achieve 'maximum sustainable yield' of coastal and marine resources in terms of human use, rather than protection of coastal water quality, living marine resources and habitat as equally important attributes of coastal systems.

4) In general, this bill seems to strike a good balance between the respective strengths of the environmental protection and coastal zone planning agencies. Hopefully, some provision can be made to assure adequate funding for both agencies to 'execute' their respective missions, particularly where the programs are delegated to the states.

5) Sections 401 to 406. The findings appropriately state the problem with the nation's current approach to environmental monitoring. I strongly believe, however, that all permitted dischargers should be required to monitor their effluent/ discharge and the receiving water. Mandatory 'local effects' monitoring would (hopefully) create a different ethic about waste generation, reduction and disposal; establish a causal link between discharge and environmental effects; and permit the state agencies to monitor ecosystem or regional health rather than focussing on the effects of some dischargers in a non-systematic way. The language in these sections would presumably authorize, but not mandate, such an approach.

In addition, the federal government should be careful not to dismantle existing long-term monitoring programs such as LANDSAT, the National Weather Service weather stations, and the National Pollutant Discharge Elimination System (NPDES). Interruption of these programs could destroy what is otherwise the best continuous baseline of general land use, climatological and pollutant loading data that are available.

6) Section 403(d). Pressure from the federal government to standardize data management is long overdue. However, this effort, if it is eventually mandated, should not result in the dismantling of presently functional regional and/or local databases, nor should it require such regional and local databases to conform to the federal system without substantial federal financial support.
As a related aside, non-delegated water pollution control programs should begin to require dischargers to submit data in machine-readable format so that more attention can be paid to data analysis and synthesis than to data entry. Eventually, and sooner rather than later, delegated programs should also begin to require data submission in machine-readable format for exactly the same reasons.

7) Section 404(b). Designation of regional monitoring programs should specifically include non-degraded coastal waters in order to establish baseline data from which to measure subsequent water quality, natural resource and/or habitat trends.

8)Sections 501 - 507. The stated philospohy and approach to achieving compliance represents a vast improvement over present enforcement options, particularly with respect to a) conditioning continued federal contracts and federal financial assistance on compliance; b) requiring quarterly, independent environmental audits at non-complying facilities; and c) removing the economic benefit of noncompliance.

9) Section 508. Citizen suit jurisdiction should be extended to the CZMA.

10) Section 601 - 606. The 'Coastal Resources Protection Fund' is an important departure from current approaches to financing water pollution control and resource protection programs to the extent it requires resource users, dischargers and violators to capitalize the fund. The principles governing the administration and allocation of funds seem equitable but, possibly, difficult to implement.

S.1178 (Senator Mitchell's proposed "Marine Protection Act of 1989")

S.1178 would 1) expand the National Estuary Program model as the means to producing comprehensive management plans for coastal and estuarine waters; and 2) require EPA to:

a) monitor implementation of the management plans;
b) completely prohibit sewage discharge from vessels in designated estuaries;
c) develop guidance for marine CSO elimination;
d) promulgate numerical marine water and sediment standards;
e) assume (some) regulatory jurisdiction over designation of dredged material disposal sites, and develop criteria and best management practices to govern dredged material disposal;
f) assess environmental effects of atmospheric deposition;
g) identify presently unregulated pollutants in the coastal zone;
h) investigate the possible use of microorganisms to biologically treat organic and chemical pollutants; and
i) report to Congress biennially on the state of the nation's coastal waters.

Some of the particularly strong elements of S.1178 include:

- creating an incentive to achieve pollution prevention/reduction by a combination of requiring sworn affidavits at the request of the governing authority, and penalties for failure to comply;
- requiring EPA to assess compliance with the comprehensive management plan;
- requiring a biennial report to Congress on the state of the nation's waters and progress in 'reclaiming' coastal waters;
- creating an Estuarine Protection Fund via penalties;
- requiring EPA to address infiltration/inflow and water conservation in developing guidance for the elimination or control of CSOs;
- investigation of the impact of atmospheric deposition; and
- investigation into alternative treatment options such as microbial degradation of organic and chemical pollutants.

S.1178 would modify and greatly expand the National Estuary Program (NEP) and use it as a vehicle for accomplishing federal water quality objectives for coastal and estuarine waters. The most significant proposed modifications to the existing NEP are 1) data synthesis would be a prerequisite for eligibility; 2) some degree of (indirect) regulatory authority would be conferred upon the 'Management Conferences'; and 3) EPA would be ultimately responsible for

implementation rather than the state(s) themselves. My comments regarding this approach are as follows:

1) Assuming that the NEP is the most appropriate vehicle for achieving reclamation of coastal and estuarine waters, my view is that data synthesis is an appropriate prerequisite for admission to the program and should be instituted immediately with respect to all nominated programs which have not yet been designated or funded. The criteria for designation once the available data are analyzed pose a philosophical problem however -- namely, should the NEP focus its attention on reclaiming degraded waters or protecting those coastal areas that do not show evidence of degradation? In principle, it seems easier and more cost-effective to protect undamaged water, living marine resources and habitat than to reverse the effects of chronic pollutant input. S.1178 provides a reasonable mechanism for addressing degraded marine waters that qualify for inclusion into the NEP. It is less effective at providing a new theory or approach for protecting non-degraded marine or coastal waters that are not 'designated' under the NEP.

2) Assuming that the Narragansett Bay Project (NBP) is a reasonable example of how the NEP was originally designed to function, I would argue that its ultimate success in producing and implementing a comprehensive management plan depends upon its "neutrality". The NBP's status as a research and planning program has ennabled it to attract broad participation from industry, local government, "user" groups and the regulatory agencies. This level of collaboration (and hopefully consensus) regarding objectives and implementation would be unlikely to exist if the Management Committee were armed with quasi-regulatory powers, e.g., the authority to compel affidavits regarding a dischargers' progress toward pollution prevention or reduction.

3) My view regarding the use of the EPA to oversee and supervise implementation of the management plans is mixed. On the one hand, it would be convenient to have a single regulatory authority empowered to compel implementation of the recommended corrective actions. On the other hand, the most important attributes of the existing NEP are a) that the primary incentive for implementation is the State(s)' sense that they have a vested interest in the outcome, and b) that the Bays Projects have been able to involve many federal and state agencies, as well as non-governmental institutions, in the process of drafting and, hopefully, executing the management plans. S.1178 compensates for the loss of these unique features of the NEP by 'guaranteeing' a 75% federal cost-share toward implementation. The federal committment of funds would, of course, be welcome and probably ought to be considered whether EPA has the primary responsibility for supervising implementation or not. [Note: The EPA-NOAA Memorandum of Understanding, in my view, represents an ad hoc effort to 'federalize' responsibility for overseeing implementation. As such,

the agreement could either be interpreted as evidence for designating a single agency to supervise implementation, or that the Bays Projects are in a better position to 'allocate' responsibilities among the implementing auhtorities based on local institutional arrangements and strengths.]

In summary, my general view is that the NEP, as exemplified by the Narragansett Bay Project, is a fine experiment in managing a waterbody with complicated water quality or natural resource problems. The Bays Projects are, however, labor intensive and not well-suited to address or solve the nation's shared marine water quality problems. The "shared" problems that I believe the federal government can solve more easily than the states or the NEP include imposition of nonpoint source controls that apply to all federally supported activities (e.g., USDA; Department of Transportation; BLM activities etc.); development of national policy and regulations that promote water conservation, address out of basin freshwater diversions and impoundments and promote more environmentally protective agricultural practices; development of criteria for dredged material disposal and designation of regional dredged material disposal sites; imposing requirements on boat manufacturers to install marine sanitation devices; promoting research and development into alternative sewage/septage pre-treatment, treatment and disposal practices; focussing more attention on habitat protection and protection of non-game marine species; creating a dedicated trust fund to help finance protection/reclamation of coastal waters, funded either with penalties or in the same manner as the savings and loan bail-out fund.

S.1179 (Senator Lautenberg's proposed amendments to the Federal Water Pollution Control Act and the Marine Protection, Research, and Sanctuaries Act, titled "Comprhensive Ocean Assessment and Strategy (Coast) Act of 1989")

S.1179 establishes 1) a process for identifying marine areas that are "in need of protection" and a process for focussing federal and state attention on those areas; 2) procedures (and schedules) for developing marine water, sediment and biological criteria by which to gauge whether marine areas need protection, and/or to gauge whether marine areas, in fact, meet the federal/state standards that are also to be developed; 3) procedures and schedule(s) for abating or eliminating marine CSOs, storm water runoff, agricultural runoff and toxic discharges to marine waters ; and 4) a formal review of federal activities that (potentially) degrade marine areas. S.1179 also mandates several major studies related to managing marine waters.

From the Narragansett Bay Project's perspective, this bill significantly strengthens the federal Water Pollution Control Act and (could) significantly assist state efforts to "reclaim" marine and estuarine waters. The following elements of S.1179 are particularly important:

1) The criteria for designation as a "marine area in need of protection" are appropriate and represent a good use of existing information. I would only note that, unless the states' 305(b) reports address nonpoint source inputs, the emphasis on toxics may preclude otherwise eligible marine areas. The bill seems overly ambitious in stating an eighteen month requirement for completing a "management strategy" and three years for implementation given the resources available to most states. What is the incentive for the state to write the "management strategy" where EPA would be required to write the plan by default?

2) The requirement that marine water, sediment and living marine resource criteria be developed is long overdue and an area that is beyond the ability of most states to address without federal guidance. It is not clear, however, whether 'living marine resource' criteria refers to criteria for gauging the health of marine organisms, criteria for gauging human health risk, or biological criteria for gauging water/sediment quality. Although guidance in all three areas would be helpful, federal standards that account for the health risk associated with human consumption of seafood are urgently needed from a public health perspective. In Narragansett Bay, for example, controlling sewage contamination of shellfish beds is a tractable problem compared to deciding whether shellfish with elevated tissue burdens of metals and organic contaminants should be harvested.

3) Federal pressure is necessary to eliminate marine CSOs and to regulate agricultural and stormwater runoff and is appropriately emphasized in S.1179. I have several (minor) concerns however. First, I do not believe that storm sewer separation is desirable, although the permitting requirements stated in Section 12 of the bill may make this option ultimately unattractive to the permittees. In Narragansett Bay, for example, >80% of the lead entering the Bay is estimated to come from stormwater runoff and other nonpoint sources including atmospheric deposition. Stormwater runoff is also a major pathway for introducing petroleum hydrocarbons, polycyclic aromatic hydrocarbons and cadmium to the Bay.
Second, it is not clear whether the proposed review of agricultural practices includes the use of fertilizers, pesticides, herbicides; erosion control; irrigation practices and water use in general. Also, in Rhode Island's case, the Soil Conservation Service may be a better source of data re. environmental effects of agricultural practices than EPA.
Third, I strongly believe that all permitted dischargers should be required to monitor their effluent/ discharge and the receiving water. Mandatory 'local effects' monitoring would (hopefully) create a different ethic about waste generation, reduction and disposal; establish a causal link between discharge and environmental effects; and permit the state agencies to monitor ecosystem health rather than focussing on impacts of some discharges. I also believe that five years to establish monitoring requirements is unnecessarily generous.

4) All of the proposed studies (atmospheric deposition, floatables, human health risk assessment, economic assessment of losses attributable to degradation of marine waters, and relationship between algal blooms and nutrient enrichment) are necessary and important. As stated above, the states could use federal standards re. shellfish tissue burdens of metals and organic contaminants.

5) The proposed review of the impact of federal agency activities on marine waters is extremely important. For example, it would be a major contribution if the use of federal highway funds was conditioned on the use of best management practices to control highway runoff. Related provisions should include a) requirements that highways be 'retrofitted' to control runoff where federal funds are used for repair; b) penalties for contractors and/or the state where construction does not meet design specifications; and c) a requirement that the entire project be subject to environmental review at one time rather than being reviewed in phases.

6) The Marine Environment Information Center is a great idea. Oceanographic data that are routinely collected by EPA (through the NPDES program, NEP, Coastal Waters Inititive etc.), Department of Defense, Bureau

of Land Management (MMS), NOAA (NMFS, Sea Grant etc.), National Weather Service should be explicitly included in the data synthesis.

7) Sections 6 and 11 of S.1179 (Marine Environment Toxics Release Inventory Assessment and Strategy; Industrial Pretreatment) are extremely important but would perhaps be more effective if coupled with direct incentives for private sector research into waste reducing technologies.

S.587 (Senator Mitchell's proposed amendments to the Marine Protection, Research, and Sanctuaries Act)

S.587 would establish ten (10) regional marine research institutions that would be charged with 1) developing research programs to address marine and coastal environmental processes and problems; 2) monitoring and assessing the effect of marine and coastal activities on environmental and public health; and 3) advising the relevant governmental entities on appropriate corrective or protective actions.

The strengths of the proposed amendment include:

- establishment of permanent institutions dedicated to marine and coastal monitoring and research;
- identified source of funding that can be applied to development, operation and maintenence of oceanographic sampling equipment and technology;
- emphasis on annual reporting of environmental trends, and effects of marine and coastal activities on the environment.

In my view, the major flaw in the proposed amendment is its failure to take advantage of, or reconcile, existing (federal and state) programs that already perform many of the outlined responsibilities of the proposed marine research institutions. The proposed amendment is unclear as to whether the "redundancy" would be eliminated by eliminating existing programs or by re-defining the mandate of the existing programs.

For example, NSF has the mandate, and the bureaucracy in place, to finance basic research into marine bio-geochemical processes. NSF's problem, in recent years, has been the lack of money dedicated to basic oceanographic research and development of marine technology. Another example is those states that have coastal zone management plans approved under the CZMA. Rhode Island, for example, has a coastal zone management agency which has the mandate and the regulatory authority to review activities in the coastal zone in terms of their consistency with principles of water quality, habitat and resource protection. Its major problems are 1) it lacks the resources to comprehensively review marine and coastal activities in view of their cumulative impact on the environment; and 2) its institutional philospohy is primarily focused on accomodating mulitple uses of coastal waters rather than on preserving and protecting water quality and natural resources.

A third example of an existing program which already performs many of the functions of the proposed marine research institutes is EPA's National Estuary Program (NEP). The eight existing NEP programs (including the Chesapeake Bay and Great Lakes programs) have, for several years, been

funding directed research into identifying marine and estuarine water quality and natural resource problems, identifying corrective actions and working with existing regulatory authorities to implement those corrective actions. Many of these programs are 'regional' in nature since the estuaries are shared by more than one political entity, although these programs are waterbody- specific. In the case of the Narragansett Bay Project, the major differences from the proposed model are that the Bay Project's focus is on a single geographically distinct waterbody, and that, because of resources, the Project has not funded the development of oceanographic sampling equipment.

In summary, from the Narragansett Bay Project's perspective, the infusion of resources into marine and estuarine research and monitoring is welcome. However, the proposed legislation fails to suggest how existing institutional arrangements can reconciled with the research, advisory and regulatory functions of the proposed regional institutes. For example, if Rhode Island's (informal) plan to institutionalize the Bay Project in some form materializes, there would potentially be a considerable overlap in function. I assume that this would also be true of other states with on-going estuary programs.

Given the variety of on-going near-coastal programs, the proposed regional marine research institutes would probably be most effective if their research focus was truly regional in scope, i.e., directed at large-scale oceanographic and climatologic problems such as sea level rise, atmospheric transport of pollutants, out of basin fresh water withdrawals etc.. One argument for this approach is that the environmental effects of direct pollutant discharges and other near-coastal activities tend to be expressed as 'local effects' as a first order problem. As a final matter, the proposed amendment should strongly emphasize the need to synthesize existing oceanographic data routinely collected under existing EPA, NOAA, ACOE, USGS, DOD, USFW, OCS and MMS programs.

APPENDICES

NARRAGANSETT BAY PROJECT

COMPREHENSIVE CONSERVATION AND MANGEMENT PLAN

STRUCTURE

The CCMP will consist of:

*I. The Management Plan itself:

- 100-250 pp
- short executive summary
- chapters devoted to comprehensive overview and recommendations for each identified problem area as well as chapters for key geographic or topical areas and recommendations to implementing authorities
- each chapter will have a two page executive summary ("Action Plan")

II. Supporting Technical Documents

- six on priority issues

  -toxics
  -pathogens
  -eutrophication/dissolved oxygen
  -fisheries managemnt (quahogs, winter flounder, general)
  -risk assessment
  -land based impacts on water quality

- document(s) on specific geographic or topical areas, e.g.

  - Blackstone River
  - Greenwich Bay
  - Wastewater treatment
  - CSOs
  - habitat loss
  - enforcement
  - long-term monitoring plan

III. Technical Reports

- reports on research funded by NBP
- other reports and data used in CCMP development

*An abbreviated version of the Mangement Plan will also be published. This "working document" will include an executive summary and the executive summaries ("Action Plans") from each chapter of the Management Plan.

Tentative schedule for production of
"Comprehensive Conservation Management Plan" (CCMP)

1. Write detailed report that supports the appropriate chapter of the management plan. [See II of "structure of CCMP"].

Reports:

*(4) "Toxics" (or "Water Quality/Sediment Quality")
(2) Fecal Contaminants
(2) Eutrophication/Hypoxia
(4) Fisheries Management
(1) Risk Assessment
(3) Land-based Impacts on Water Quality
Miscellaneous: (1) Blackstone River
(1) Greenwich Bay
(1) Wastewater treatment
(1) CSOs
(1) habitat loss
(1) enforcement

TOTAL: 22 person months to complete writing of "special reports"

2. Formal peer and committee review of each report.
TOTAL: assume 2 months per report to complete review process, including revisions.

3. Draft appropriate chapter of managment plan upon completion of the relevant report; "build" Chapter VII. "Recommendations to implementing authorities"
TOTAL: 1 month maximum per chapter

4. Committee review, interest/user group review, public hearings

NOTE: Concurrent and continuing activites include cost/benefit analysis, assembling bibliography, "locating" funds for implementation

*estimated person months to complete

1985 RESEARCH PROJECTS

Brown, M., L. Kossin and **H. Ward (Principal Investigator). Narragansett Bay issue assessment: Public perceptions.** What does the public think about the condition of Narragansett Bay?

Cabelli, V.J. Microbial indicator levels in the Providence River and Upper Narragansett Bay. How polluted is Narragansett Bay? A study investigating the sources, loadings and transport of fecal indicators (indicators of human disease-causing pathogens from fecal wastes) in the Providence River area.

Cabelli, V.J. Microbial indicator levels in shellfish, water and sediments from the Upper Narragansett Bay conditional shellfish-growing area. Should other indicators of fecal contamination be used in addition to or instead of the standard coliform counts for monitoring shellfish areas? A study comparing several fecal indicators to the fecal coliform standard and their relevance to water and shellfish quality.

Kern, K.G. Quahog histopathology studies. How healthy are Narragansett Bay quahogs? A study evaluating the health (condition and presence of diseases) of quahogs from various sites in Narragansett Bay.

Kremer, J.N. Improving an estuarine water quality ecosytem model for Narragansett Bay. The development of a computerized ecosystem model that looks at the relationships between nutrients and dissolved oxygen, and the growth of Bay planktonic organisms.

Kumekawa, G., C. Giliberto, L. Carlson and G. Poirer. **Towards the management of Narragansett Bay: An institutional analysis.** Are Rhode Island's regulatory agencies meeting the goals of the public, Bay user groups and government agencies? A study looking at Narragansett Bay regulatory institutions.

Pilson, M.E.Q. and C.D. Hunt. **A summary of results from the SINBADD cruises 1985-1986.** How polluted is Narragansett Bay? A Bay-wide water quality study investigating the sources and distributions of nutrients and trace metals entering Narragansett Bay.

Pratt, S.D. Status of hard clam fishery in Narragansett Bay. How has the harvesting of quahogs changed in Rhode Island? A study examining the history and governance of the quahog fishery in Narragansett Bay.

Pratt, S.D., B.K. Martin and **S.B. Saila (Principal Investigator). Status of the hard clam (*Mercenaria mercenaria*) in the Providence River and Mt. Hope Bay.** Are quahogs present in closed fishery areas? A study investigating the status of quahogs from the closed fishery areas of the Providence River and Mt. Hope Bay.

Quinn, J.G., J.S. Latimer, C.G. Carey, J.T. Ellis and J. Zheng. **Development of a one dimensional water quality model for the Blackstone River; Part 1: Chemical monitoring of pollutants in the Blackstone River.** How do point source (municipal and industrial) inputs affect the Blackstone River's water quality? A study investigating the sources of toxic pollutants (trace metals and organic compounds) to the Blackstone River.

Smayda, T.J. Environmental conditions and plankton dynamics in Narragansett Bay during an annual cycle characterized by a brown-tide. What were the climatological and water quality conditions in Narragansett Bay during the "brown tide" algal bloom? A study examining Bay conditions the summer of 1985.

Thibault/Bubly Associates. Trace metals in quahogs from Narragansett Bay. How contaminated are Narragansett Bay quahogs? A Bay-wide study investigating the levels of trace metals in quahogs from Narragansett Bay.

Vandal, G.M and W.F. Fitzgerald. **(M.E.Q. Pilson - Principal Investigator) Mercury in the waters of Narragansett Bay.** How polluted is Narragansett Bay? A Bay-wide water quality study investigating the levels of mercury in the waters of Narragansett Bay based on samples collected during the SINBADD cruises.

Wright, R.M. Development of a one dimensional water quality model for the Blackstone River; Part 2: Mathematical modeling. The development of a water quality computer model to predict pollutant distributions in the Blackstone River.

1986 RESEARCH PROJECTS

Almeida, F.P. and M.P. Fogarty. **Assessing the effects of pollutant exposure on estuarine populations.** Do pollutants differentially affect larval, juvenile and adult winter flounder populations? The development of a life history model to estimate the impact of pollutants and fishing on winter flounder populations.

Brown, H.S., R. Goble and L. Teitelbaum. **Methodology for assessing hazards of contaminants in seafood.** What risks are Rhode Islanders taking by eating Narragansett Bay shellfish? The development of a method to estimate the levels of trace metals in quahog tissues that might cause adverse health effects in human consumers.

Buckley, L.J. and E.M. Caldarone. **Recent growth and biochemical composition of juvenile, young-of-year winter flounder from different areas of Narragansett Bay.** How healthy are young winter flounder populations in Narragansett Bay? A study examining juvenile winter flounder populations across a Bay-wide pollution gradient.

Deacutis, C. Bathing beach monitoring for new indicators. What are the bacterial levels in the waters at major Rhode Island beaches? A study comparing the fecal coliform standard to EPA's proposed indicator organism, *Enterococcus*.

Doering, P.H., C.A. Oviatt and **M.E.Q. Pilson (Principal Investigator). Monitoring of the Providence and Seekonk Rivers for trace metals and associated parameters.** How polluted is the Providence River area? A Providence River water quality study investigating the levels of trace metals in the Providence and Seekonk Rivers.

Doering, P.H., **M.E.Q. Pilson (Principal Investigator)** and C.A. Oviatt. **SPRAY cruise dissolved oxygen.** How polluted is the Providence River area? A study investigating the relationship between pollutants and dissolved oxygen in the Providence and Seekonk Rivers during the summer months.

Frithsen, J.B., D. Nacci, **C. Oviatt (Principal Investigator)**, C.J. Strobel and R. Walsh. **Using single-species and whole ecosystem tests to characterize the toxicity of a sewage treatment plant effluent.** How do experimental ecosystems respond to increasing doses of sewage? Are these responses predictable from simple laboratory bench tests conducted with the same sewage doses? A study comparing the toxic effects of a wastewater treatment facility effluent on a single species and on an experimental ecosystem.

Gold, A., and G.W. Loomis. **Phosphorus loadings to the groundwater from suburban land uses.** How efficient are Individual Sewage Disposal Systems (ISDS) at removing the phosphorus from household wastewater? A study examining the removal of phosphorus from conventional and experimental ISDS systems.

Jeffries, H.P, S. Hale and A. Keller. **Historical data assessment finfishes of the Narragansett Bay area: Report 88.** How do the historical trends of finfish populations in Narragansett Bay compare to the current status of these populations? (Two-year study 1986-1987.)

Ries, K. Estimation of surface-water runoff to Narragansett Bay, Rhode Island and Massachusetts. What are the seasonal flow rates of freshwater inputs to Narragansett Bay? A study evaluating the monthly averages of runoff into Narragansett Bay from its tributaries. (Two-year study 1986-1987.)

Keating, J.M. Jr. Report on goals for the future of Narragansett Bay. What do Narragansett Bay user groups (fishermen, environmentalists, scientists) expect from the Bay? A study examining the concerns of different Bay user groups.

Lee, T.C., **S.B. Saila (Principal Investigator)** and R.E. Wolke. **Winter flounder contaminant and pathological survey - Narragansett Bay and vicinity.** Is there a correlation between adult winter flounder health and water quality? A study examining changes in cell structure and the levels of toxic pollutants in winter flounder tissues.

Myers, J.C., J. Ehrenfeld (Principal Investigator) and M. Murray-Brown. **Governance of nonpoint pollution inputs to Narragansett Bay.** How does Rhode Island regulate nonpoint sources of pollution? A study that examines the instituional structure and regulatory programs of state agencies and recommends inprovements.

Nixon, S. Historical assessments of Narragansett Bay. Has the water quality of Narragansett Bay and the health of its living resources changed over time? A study evaluating Narragansett Bay historical data to examine trends in the levels of toxic pollutants, nutrients and plankton. (Two-year study 1986-1987.)

Pruell, R.J. , C.B. Norwood, R.D. Bowen, R.E. Palmquist and S.J. Fluck. Organic contaminants in quahogs, *Mercenaria mercenaria*, collected from Narragansett Bay. How contaminated are Narragansett Bay quahogs? A Bay-wide study examining the levels of organic contaminants in Narragansett Bay quahogs.

Quinn, J.G., J.S. Latimer, J.T. Ellis, L.A. LeBlanc and J. Zheng. Analyses of archived water samples for organic pollutants. How polluted is Narragansett Bay? A Bay-wide study investigating the sources and levels of organic compounds in Narragansett Bay based on samples archived from the SINBADD crusises.

Rippey, S.R. and W.D. Watkins. Mount Hope Bay sanitary survey - Microbiological 1986-1987. Can Mount Hope Bay be reopened to shellfishing? A study examining the extent of fecal pollution in Mount Hope Bay.

Smayda, T.J. Survey of phytoplankton dynamics along a eutrophication gradient in Narragansett Bay. What is the distribution and productivity of the microscopic plants in Narragansett Bay? A study examining the productivity of the principal algal species in Narragansett Bay in relation to a gradient of nutrient enrichment.

Spaulding, M.J., F.M. White, P. Heinmiller, M.M. Simoneau, S.J. Liang and J.K. Choi. Circulation Dynamics in Mount Hope Bay and the lower Taunton River. How does freshwater from the Taunton River circulate in Mount Hope Bay? The development of a computer model to predict water movement between Mount Hope Bay, Narragansett Bay and the Sakonnet River.

Swanson, J.C. and K. Jayko. A simplified estuarine box model of Narragansett Bay. How do substances discharged into Narragansett Bay affect the water quality of surface and bottom waters? The development of a two-layer computer model for predicting pollutant distributions in Narragansett Bay.

West, N. Evaluation of shoreline recreational usage. A study evaluating the recreational uses of Upper Narragansett Bay.

1987 RESEARCH PROJECTS

Brown, H.S., R. Goble and C.C. Mao. Assessment of hazards of contaminants in seafood. What risks are Rhode Islanders taking by eating Narragansett Bay shellfish? Use of a method, developed in 1986, for analysis of risks to human consumers from metals and organics in quahogs.

Buckley, L. Viability of the eggs and larvae of winter flounder from Narragansett Bay reared under controlled conditions. How do biological factors, natural environmental variability, and pollution affect production of winter flounder? A study of growth and survival of winter flounder from eggs and larvae spawned by adults from Narragansett Bay and Long Island Sound.

Durbin, A.G., G. Klein-MacPhee, and E. Durbin. A study of growth, survival and food habits of winter flounder in Narragansett Bay, R.I. What factors influence the abundance, growth and survival of winter flounder larvae in Narragansett Bay? A study examining the physiological state, age and growth rates, and food habits of winter flounder larvae. (Two-year study 1987-1988.)

Hargraves, P.E. Characterization of "brown tides", and other bloom-forming picoalgae and their interactive effects on phytoplankton. What alga caused the "brown tide" of 1985 in Narragansett Bay? A study of picoplankton-sized algae from Narragansett Bay, including isolation, cultivation, species identification, and examination of possible biological competitive, interactive effects *in vitro* among these algae. (Two-year study 1987-1988.)

King, J.W., J. Quinn, R. McMaster, S. Pratt. A study of the sediments of Narragansett Bay. How are contaminated sediments transported and deposited in Narragansett Bay? Do the rivers act as reservoirs for contaminated sediments? Continuation of a two year study on the history of pollution in Narragansett Bay as recorded in the sediments. (Two-year study 1987-1988.)

Sutinen, J.G. Regulatory compliance and enforcement: industrial wastewater pretreatment programs in R.I. How effective is enforcement of industrial pretreatment in R.I.? A study examining noncompliance patterns and the role enforcement plays in controlling noncompliance.

1988 RESEARCH PROJECTS

Apogee Research, Inc. Inventory of funding sources for cleanup and maintenance of Narragansett Bay. How can we pay for a clean Bay? A study of available funding sources for cleaning up point source, CSO, and nonpoint source pollution.

Chang, P.W. Etiology of clam leukemia. What causes cancer in soft-shelled clams? An investigation of viruses versus organic pollutants as the main cause of neoplastic tumors in the soft-shelled clam, *Mya arenaria*.

Dettman, E.H. and F.A. Godshall. Dissolved oxygen modeling in the Providence River, Narragansett Bay, R.I. Will the pollutants we discharge to the Providence River cause low dissolved oxygen levels there? Running available water quality models to predict dissolved oxygen concentrations, given loadings of pollutants to the Providence River.

Germano, J. and D. Rhoads. Narragansett Bay sediment quality survey, August 1988. What do benthic communities look like at different sites in Narragansett Bay? In-situ camera survey at the sediment-water interface to measure redox potential and estimate biological activity.

Gold, A.J. and L.T. Thiem. Design and evaluation of nitrogen removal systems for individual sewage disposal in coastal communities. What kinds of individual sewage disposal systems (ISDS) remove nitrogen most efficiently? A study to monitor the removal of nitrogen in effluent from alternative and conventional ISDS under the field conditions found in coastal regions of Southern New England. The study may be used to recommend more effective ISDSs in non-sewered communities.

Huebert, B. Atmospheric deposition as a source of nitrate to Narragansett Bay. Is the atmosphere a significant source of nitrogen to Narragansett Bay? A study monitoring wet and dry deposition of nitrogen at sites in major watersheds that feed the Bay.

Keith, D.J. and W.R. Davis. Transport and fate of sediments within Narragansett Bay. What are the particle/pollutant transport pathways within the Narragansett Bay system? A study examining resuspension potential and relationships between sediment erodibility, grain size and water content.

Schimmel, S. The whole-effluent toxicity component of a wet weather study of the Providence River and upper Narragansett Bay. How do effluents affect the Bay biota? An effort to characterize the toxicity of wastewater treatment facility effluents, CSO discharges, and ambient waters in Narragansett Bay during dry and wet weather conditions.

Scott, J. and M. Redmond. Sediment toxicity in Narragansett Bay. How polluted are sediments in harbors and coves around the Bay? Use of acute toxicity tests to evaluate relative toxicity of sediments from embayments surrounding Narragansett Bay.

Wright, R., L.T. Thiem, J. Quinn, W. Watkins and S. Rippey. **Problem assessment of wet weather discharges entering Narragansett Bay from tributaries and treatment plants receiving urban runoff and combined sewage.** Where does pollution go when it rains? A study to characterize and assess the impact of wet weather discharges from tributaries and treatment plants in comparison to dry weather pollution sources entering the Providence River and upper Narragansett Bay.

TESTIMONY

OF

ROBERT L. BENDICK, JR.

TO

HOUSE COMMITTEE ON MERCHANT MARINE AND FISHERIES

ON

THE NARRAGANSETT BAY PROJECT

JULY 31, 1989

My name is Robert L. Bendick, Jr. and for more than seven years I have been Director of Rhode island's Department of Environmental Management. During that time I have helped to oversee the Narragansett Bay Project; I have watched and participated in its progress with interest. I want to congratulate Dr. Eva Hoffman and Caroline Karp, the Project's two Executive Directors for their intense efforts on the Bay Project's behalf. If, as I expect, the Project is successful, if it does guide us to more effective ways of preserving and protecting the Bay, these two dedicated women deserve substantial credit. I also want to thank the volunteer committee members who have watched over the project and have played such an important role in making research decisions. While this cross section of people concerned about the Bay have been extremely helpful already, their most important job is yet to come - discussing and synthesizing an action plan for Narragansett Bay's future.

As one of the officials responsible for the day-to-day protection and management of Narragansett Bay, I will first discuss the primary findings of the Project to date which are of practical and operational importance. I will then propose changes in the Federal approach to coastal and estuary protection which are required to deal adequately with those findings.

The Bay Project has shown that the Bay's water quality is improving. This is helpful and important information which was not previously apparent. It proves that the efforts made by

Rhode Islanders, by environmental groups like Save the Bay, by elected officials and by government agencies are working, and that the millions of dollars spent on Bay cleanup through Federal Clean Water Act programs and by State and local governments have been a wise investment. Unfortunately this good news is balanced by several serious concerns:

1. Portions of Narragansett Bay still suffer from low oxygen levels, bacterial contamination and, perhaps, from nutrient enrichment. Greenwich Bay is of particular concern. This is an important shellfishing and marine nursery area in itself. Its loss to commercial fishing would be a serious setback. But land use patterns around Greenwich Bay are becoming characteristic of other parts of the Bay's shores and may result in similar problems. Is Narragansett Bay becoming Long Island Sound? Are Greenwich Bay's problems the warning sign?
2. The Blackstone and Taunton Rivers are major contributors of pollutants to the Bay. There is an unknown and serious source of metals in the upper Blackstone. This reminds us that, as in all estuaries, we must be concerned with the entire watershed and that interstate cooperation is required if tributary problems are to be identified and solved.
3. While dry weather pollution sources are much improved, wet weather flows remain a critical and probably worsening problem. Urbanization of the Bay's shores and watershed further intensifies non-point pollution. Septic systems may be a significant long term source of nutrients.

4. The flushing action of the Bay as a whole and particularly of sub-bays and coves within its boundaries can be very slow, thus intensifying the impacts of pollutants and extending their recovery time.
5. While toxic pollution may have limited, obvious and acute impacts on Narragansett Bay marine life, it may well have subtle but important impacts on the overall ecosystem.
6. The number of people who want to use Narragansett Bay for boating, commercial and sportsfishing, access to the shore, shoreline residential and commercial uses is overwhelming the resource. Not enough area has been preserved either for marine-dependent uses, public activity or for protection of 'critical'/indigenous marine resources and habitat.

The State of Rhode Island is already taking strong measures to continue improvement of the Bay's water quality and to address unsolved problems:

1. 88% of Rhode Island's wastewater treatment capacity has been under construction over the last five years; advanced treatment is being required in the Pawtuxet River and a State Revolving Loan Fund Program has been adopted by the General Assembly to foster future cleanup work.
2. Rhode Island is among the first three states in the country to have its Non-Point Water Pollution Control Strategy approved by E.P.A. Wetlands and coastal regualtory programs along with aggressive residential and industrial recycling efforts help to control non-point water pollution.

3. The State has been extremely active in open space preservation during the last six years and has yet another open space bond issue on the ballot for 1989.
4. The Comprehensive Planning Act of 1988 requires municipalities to prepare comprehensive plans to guide growth. These plans must take into account impacts on water quality.
5. Rhode Island has strong fisheries and environmental enforcement policies.

But these steps are simply not enough. The Narragansett Bay Project will define additional actions which must be taken. There is a legitimate national interest in the quality of Narragansett Bay and of other coastal waters. To implement the Bay Plan the Federal role in coastal protection must be continued and expanded in the following ways:

1. As shown in EPA's recent Sector Studies and confirmed by our experience here in Rhode Island, local government is hard pressed in meeting the financial demands of upgrading, replacing and operating water pollution control facilities. We have estimated that such activities will require between $800 million to 1.4 Billion in Rhode Island over the next 20 years. These costs will be further increased by the advanced treatment (such as nutrient removal) which may be needed in stressed parts of the estuary. Loan funds, while helpful, will not be sufficient for many municipalities. The Narragansett Project has

shown that treatment systems do work and are likely to be a critical element in future cleanup strategies. Given this, the Clean Water Act should be further amended to provide for implementation of Estuaries Management Plans. These amendments should allow for Federal block grants through states to municipal government for water pollution control measures which conform to and carry out the plans adopted pursuant to the Estuaries Program. Grants in the 30-50% range should be sufficient to make the program work if they are linked with low interest loans.

2. Industrial pretreatment is working but evidence suggests that toxics are still going down sewers and storm drains. The Resource Conservation and Recovery Act (RCRA) is not sufficient to prevent this. Several additional measures would help:
   a. Pretreatment, RCRA, and Superfund Title III reporting requirements should be modified to allow states to more easily develop unified toxics reporting systems.
   b. A deposit system should be adopted for many industrial chemicals. Under such a system waste products would be returned to chemical manufacturers after use.
   c. E.P.A. should support additional waste reduction research for specific industries and processes.
3. Federal agencies must do more to prevent non-point sources of pollution:

a. Road design and construction and runoff from roads have major impacts of non-point problems. It should become a specific goal of Federal Highway Administration Programs to minimize non-point pollution and Federal Highway Trust Fund money should be made available for measures to accomplish this. Within critical areas extensive water pollution control steps such as buffer zones and retention basins should be design requirements for new or upgraded roads.

b. Agricultural subsidy programs should be further modified to insure buffer zones around bays and their tributaries.

c. The Environmental Protection Agency should support further research into the impacts of septic systems on water quality and on the development of effective alternative on-site disposal methods, including research into septage treatment and disposal.

4. The Land and Water Conservation Fund should be restructured through the American Heritage Trust Act or other new initiatives to provide a consistent and sufficient source of funds for acquisition and protection of coastal open space. In its own land acquisition efforts, the Federal Government has traditionally placed far more emphasis on mountain and forest land than on more threatened coastal systems. The State side of the Land and Water Fund once helped to offset this, but that program is currently without meaningful funding.

Protection of coastal open space is expensive, but it is essential for recreation, fish and wildlife habitat and water quality protection. Revenues from offshore oil and gas leasing are enough to fund a substantial national program. At the current rate of building along the shore, there is little time left for a coastal acquisition initiative.

5. While expansion of the Dingell-Johnson sportfishing program through the Wallop-Breaux amendments has increased resources for fisheries management, the pressure on commercial and sportfish stocks has increased even more dramatically. This pressure results not only from the fishermen themselves, but also from human impacts on critical coastal fisheries habitat. These trends can only increase.

   More money is needed for fisheries management, for propagation of important marine species, and for preserving and restoring estuarine habitat, tributary rivers, and coastal wetlands. This might be accomplished through a uniform system of State salt water fishing licenses tied to increased Federal aid.

6. Finally, the Estuaries Projects have tried to view estuaries as whole systems, whole watersheds. But the Federal response to coastal problems remains fragmented, even competitive. If estuaries and coastal waters are to be saved, they must be treated in a coordinated way. In

proceeding with its coastal initiatives, the Federal Government must adopt measures to insure coordination of its efforts in conformance with the management plans developed and adopted for bays and estuaries.

Once or twice during the summer my children and I go to a dock on Narragansett Bay and shine a searchlight into the water. At first one sees only random bits of matter floating by. Then, a dust-like cloud gathers - a ball of zoo-plankton attracted to the light. Next larger creatures appear, feeding on the tiny ones and still larger shrimp and silversides and squid. Finally, big fish travel through the shadows beneath the dock.

There is in this a sense of connectedness, a chain of life stretching out into the bay and to the ocean beyond. And just as the marine ecosystem of this bay is joined to that of the ocean and to other bays and estuaries, our approach to protecting these places ought to be coordinated and connected, too.

In carrying out the recommendations which will come from this and other estuary studies there will be roles for private citizens, for businesses, for environmental groups, for State and local governments. But these efforts will not succeed unless as a nation we recognize that our coasts and particularly our estuaries, if anything, are more important as national assets than the Yellowstones and Yosemites of this

country, and that the Federal government must play a continuing financial and management role in protecting their value for future generations of Americans.

RLB/ms

1750A

TESTIMONY OF
JOHN P. DEVILLARS
SECRETARY OF THE EXECUTIVE OFFICE
OF ENVIRONMENTAL AFFAIRS
BEFORE THE
SUBCOMMITTEE ON OVERSIGHT
HOUSE MERCHANT MARINE AND FISHERIES COMMITTEE

I am John P. DeVillars, Secretary of the Executive Office of Environmental Affairs. I appreciate this opportunity to express the views of the Commonwealth of Massachusetts on the Narragansett Bay Project (NBP) and its efforts in addressing water quality and ecosystem integrity in Narragansett Bay. The Commonwealth of Massachusetts commends the Narragansett Bay Project for its efforts to protect, restore and maintain the water quality of the Bay and pledges to support these efforts to the greatest extent possible. However, the single greatest barrier to meeting the Narragansett Bay Project's goals is the lack of funding to implement the recommended actions to mitigate or eliminate pollution from the Bay. In Massachusetts, as with a number of other states, we are facing difficult fiscal situations that hamper our attempts to meet the environmental standards that the federal government has imposed or to meet the more stringent regulations that the states have adopted. I urge this committee to re-evaluate the role of the federal government in setting minimum environmental standards and not also providing sufficient resources to assist states in meeting these goals. In the 1970s Congress promised to provide financial and technical resources to assist states in meeting the environmental goals of statutes such as the Clean Water Act. Over the past decade, these promises by the federal government have not been upheld and today the states, local communities and ratepayers are bearing the high costs of cleanup. We cannot afford not to move ahead to meet our goals to improve water quality. We are assuming our responsibility in this and we urge you to see that the federal government assumes its share of the costs.

The support of the Narragansett Bay Project (NBP) by Massachusetts comes from our commitment to the goals of the National Estuary Program and the specific goals and objectives of the Narragansett Bay Project. Our first hand knowledge with managing the Buzzards Bay Project in addressing water quality issues from a holistic approach has prompted us to apply for designation of the Massachusetts Bays (including Cape Cod Bay) as an estuary of national significance. The Buzzards Bay Project is in the process of drafting a Comprehensive Conservation and Management Plan that will recommend specific action plans to address problems relating to eutrophication, coliform contamination, toxic contamination and protection of living resources and habitats and will develop an implementation plan that is agreed to by local communities and state and federal agencies. The process of drafting this plan has reinforced our awareness that activities within watersheds are affecting marine water quality. A strong emphasis in our management plan will be on managing land uses.

Because 60% of the watershed of Narragnasett Bay lies in Massachusetts, we are aware of the role that Massachusetts will play in assisting the NBP to meet its goals. We are participants in the NBP agement Conference and are committing resources to cooperative efforts in addressing the priority problems identified by the Narragansett Bay Project.

Two Massachusetts watersheds contribute to pollution in Narragansett Bay, the Blackstone River basin and the Taunton River watershed. The Blackstone River Basin originates in 5 headwater tributaries in central Massachusetts and empties into the Seekonk River at the head of Narragansett Bay. By the 19th century, the Blackstone was one of the most heavily industrialized rivers in the world. It was also one of the most polluted recieving both raw human sewage and industrial wastes of textile mills and other industries. The mills built impoundments that accumulated toxic compounds in the sediments. Through the years these impoundments have broken and today sediments with loads of heavy metals and other contaminants are being carried into Narragansett Bay. I am concerned about these pollutants and the detrimental effect they have on the Blackstone River and Narragansett Bay. Unfortunately, the solution to the problem is not clear. As a first step in identifying both short term and long term solutions, a cooperative sampling program has been initiated between Rhode Island and Massachusetts.

Last year both the Massachusetts Department of Environmental Protection (MADEP) formerly called the Department of Environmental Quality Engineering, and the Rhode Island Department of Environmental Management (RIDEM) conducted water quality and sediment sampling in the river on both sides of the border. These agencies cooperated in collecting core samples that will assist in identifying the extent of the problem and the MADEP has agreed to analyze one of the cores and perform intercalibration analyses on split samples. The NBP funded some of the sampling activities and encouraged coordination between the two state agencies.

We have had better successes in treating human wastes in the Blackstone than in eliminating sediment loads from the impoundments. The raw sewage running through the city of Worcester became so intolerable, that by the late 1800's a sewer system was constructed. A series of treatment plants were build in 1886, 1915, 1925 and upgraded after World War II. Even so in 1964, the river was so polluted that the city newspaper claimed that a "fish can't live in it". I am pleased that today the Upper Blackstone Water Pollution Abatement District has a reputation as being a well operated plant. The treatment facility removes 90% of major pollutants and has initiated a program to remove phosphorus and ammonimum nitrogen. We continue to upgrade the system, replace or improve pumping stations that overflow during storms, upgrade the combined sewer overflows to minimize flooding and decrease violations of water quality

standards amd inspect conduits for illegal hookups. The net result of this is improved water quality from the upper Blackstone and other communities have plans to or are implementing similar efforts in the lower Blackstone. Nonetheless, all of these activities have slowed with decreasing federal funds and assistance.

Both the MADEP and the NBP have identified a major source of pollution that enters Mount Hope Bay as bacterial contamination from failing sewage treatment plants and combined sewer overflows that discharge raw sewage into the Taunton River. I am pleased to report that we are taking action in upgrading these systems. The National Pollution Elimination and Discharge System (NPDES) permit for the Fall River treatment plant and combined sewer overflows (CSOs) has been agreed to by the state agencies and EPA. The agreed to limits on discharges will not violate water quality standards.

Currently the Mayor of Fall River is completing a feasibility study to eliminate discharges from four CSOs near Kennedy Park. A feasibility is also being conducted for meeting the NPDES permit discharge requirements from the sewage treatment plant and the remaining CSOs.

In order to meet our commitment to improved water quality, we have established a state revolving fund. Governor Dukakis has just signed a bill that establishes a $1,400,000,000 bond measure to pay for water quality improvements. This bill authorizes the state to borrow money on the bond market and make it available as loans to cities and towns facing deadlines in cleaning up sewage systems or water supplies. Funds such as these will be available to Fall River as they move towards meeting the court ordered mandate to meet water quality standards.

Other towns along the Taunton River are also working towards solutions in meeting water quality standards. Currently, Somerset has a moratorium against adding any new hook-ups to the wastewater facility. It is looking into expanding and upgrading its facility to improve the quality of its discharge. Clearly not only do Massachusetts residents benefit from these actions, but Rhode Island residents will experience improved water quality in the Bay. We are anticipating reductions in bacterial loading from Massachusetts waters as a result of the proposed upgrading and constrcution activities of wastewater treatment plants. These are important steps in reducing levels of fecal coliforms in Mount Hope Bay that are keeping productive quahog beds closed.

Massachusetts has been aggressive in identifying industrial polluters that discharge into the Taunton watershed and empty into Mount Hope Bay. My agencies have been strong advocates for mitigating pollution from an industrial plant, ICI, that manufactures dyes. The discharges from this

plant empty into a tidal stream, Muddy River that does not dilute the effluent to meet water quality standards. Through setting limits on the permit discharges, reviewing these for federal consistency and contacting Rhode Island agencies to become involved, effluent discharges will be much improved from past levels. Similarly, our Southeast Regional Planning and Economic Development District has identified jewelry manufacturers as contributing heavy metal loadings to Narragansett Bay. As a result of Massachusetts and Rhode Island agencies and organizations' advocacy, jewelry manufacturers are reducing metal loadings into Narragansett Bay.

The MADEP has conducted preliminary surveys in the Mount Hope Bay area and are coordinating these monitoring activities with RIDEM to develop a program that is consistent on both sides of the border. The removal of coliforms will be the primary goal, not only to assist the shellfishing industry, but for public health reasons as well. Concurrently efforts to remove heavy metals and other toxic contaminants will ensure high quality seafood products from the Mount Hope Bay area.

There are two other activities which Massachusetts is undertaking that will be of value to the area. During the late 1970s the Massachusetts Coastal Zone Management (MCZM) Office supported efforts to develop oil spill contingency plans for coastal communities. Final plans were never developed for Buzzards Bay and Mount Hope Bay. The Southeast regional coordinator for MCZM will be coordinating with the US Coast Guard both in Massachusetts and Rhode Island to update and complete these plans. We are also contacting each coastal community to remind them of the new MARPOL regulations requiring marinas to have adequate trash containers for plastics and other solid wastes generated by boats.

In summary, the Environmental Affairs office has committed significant resources to addressing the point sources of discharge in the watershed feeding Narragansett Bay. We intend to aggressively continue with these efforts and to identify those who are illegally discharging and violating water quality standards. I have established an Environmental Enforcement Strike Force to go after repetitive violators and an Environmental Enforcement Task Force to assist first time violators in complying with regulations and conditions set forth in permits and licenses. I have pledged cooperation of my Environmental Affair agencies in monitoring the Balckstone River, Taunton River, Mount Hope Bay and other areas of the watershed to identify the extent of pollution problems and to assess the effectiveness of our clean up efforts. I am concerned about the erosion of contaminated sediments from impoundments in the Blackstone, however there does not appear to be an easy solution to this problem. We will conduct feasibility studies to examine the problem and identify a short term solution that will decrease the current erosion problem as we work towards a long term solution.

Finally, we are in the process of establishing a nonpoint source program in conjunction with EPA. Nonpoint sources of pollution are diffuse and difficult to control. A major thrust of the program is to educate the citizenry about how they can modify their activities to improve water quality. Although in its formative stages, this program will focus on minimizing pollution from agriculture, lawn care, and other diffuse sources that feed into watersheds and affect water bodies.

As with the Buzzards Bay Program, the Narragansett Bay Program is a strong force in addressing water quality problems from a holistic approach. We are pleased to participate in the project and will continue to cooperate with the Project and Rhode Island in working towards solutions that improve water quality in the Bay. I am excited about the possibilities of what we can achieve together.

Thank you for the opportunity to testify before you today.

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LESSONS THAT WE CAN LEARN FROM THE NARRAGANSETT BAY PROJECT

GROVER J. FUGATE
EXECUTIVE DIRECTOR
COASTAL RESOURCES MANAGEMENT COUNCIL

Thank you for the invitation today to share some of councils thoughts regarding the Narragansett Bay Project and some of the lessons we think can be learned from this endeavor. While the Bay project has not reached a conclusion and the success of this project has yet to be measured, we do feel there are lessons which can be gleaned from this exercise and should be applied to other estuarian projects.

For the purpose of discussion, I would like to break my presentation into two (2) parts. The first part will concern itself with observations which are generic in nature and can be applied to any project in the National Estuary Program. The second part will be more specifically related to the Narragansett Bay Project.

The National Estuary Program as council understands it, is to study the problems confronting an estuary designated under the program and develop a comprehensive conservation management plan (CCMP) to solve those problems. This is the program simply stated, but the troublesome part is the definition or goals of CCMP do not get much more detailed than this in the EPA guidance

to the regions. Hence, there is considerable differences in interpretation among parties as to what a CCMP is actually suppose to look like. While we realize that the vagueness provides inflexibility, it also creates the opportunity for conflict.

The term comprehensive itself is somewhat of a misnomer as the plans will not be a truly comprehensive management plan for the Bay as there are many areas which by the very management orientation of EPA are limited.

The National Estuary programs are basically water quality oriented, yet many of the problems which they try to solve are land use oriented, and the program was not designed to really capture these components and deal with them. The Coastal Zone Management Programs on the other hand were designed to capture and deal with land use but are somewhat weak on the water quality side.

Thus the logical conclusion is that the two programs should be intricately linked, however, there are some hurdles to effective cooperation which have to be overcome. The first is the CZM programs have a responsibility to balance both development or economic consideration with environmental concerns with greater weight given to the environmental side. The EPA programs, for the most part, do not give any consideration to economic factors, they are strictly environmental protection oriented.

This difference in approach can result in a difference in opinions, as one program must balance the greater good while the other must merely protect. The conflict which arises here is exasperated by an additional problem and that is the CZM manager, in many cases, is not part of the upper decision making body. Instead the CZM manager must try to resolve these differences at the management conference level where the manager is one of 27 or more individuals. These large groups are not necessarily conducive to the problem solving discussion which need to occur.

Thus, the only prospect for substantial impact on a estuarian program and the CCMP available to the CZM program manager, caught in these circumstances, is the Federal Consistency process. If the CZM manager has to resort to this method of resolving disputes, it could set up conditions which lead to unnecessary conflict and hamper the necessary cooperative efforts that will be needed to tackle the multi dimensional problems facing the estuary.

An initial attempt was made to resolve these issues at the National level when a MOU was entered into between EPA and NOAA regarding coordination of the CZMP and NEP. This effort is a first step in the right direction however, much work remains to be done. For example, the MOU still does not provide for the

CZM manager to take part in the policy committee (the highest decision making level in the Bay Project). In addition, national or regional workshops have yet to be held.

I understand one is scheduled for November in the eastern region but this may prove to be a bit late for the Bay Project.

The issues I raise here have been echoed in a recent report by William Travis, Deputy Director of the San Francisco Bay Conservation and Development Commission to the Evaluation Office of OCRM in NOAA. This report is part of Rhode Islands 1989, 312 evaluation. I have attached the relevant sections to my testimony in Appendix 1.

Aside from flushing out the implementation problems in the MOU, I think EPA would do a service to future estuary projects by providing a framework for the CCMP and lay out some basic steps for these programs to follow. This hopefully would ensure that resource inventories take place in the early stages of the program and not left to the last year. It would also insure that policy studies are not taking snapshots of programs and agencies in years one and two and become out dated by year five because of the dynamic nature of the regulatory environments. The primary concern here, is that the studies that are done support managements needs, and we do go looking for uses after

studies are done or find that management questions still lie unanswered because we don't have the proper information to solve them.

We think funds should state out low and gradual and the Management Conferences should spend at least six months on problem identification. It is a well known fact that problem identification is the most crucial step in problem solving and results in 80% of the failures because either to little time was devoted to it or it wasn't done properly. In order for a management plan to be successful it must ask the right questions at its inception.

Another area which needs further consideration is implementation, more specifically plan review and adjustment. The more successful management plans are by their nature dynamic, changing entities which are constantly refined and updated. It would seem that the National Estuary Program has placed most of its emphasis on plan development and little on evaluation and adjustment.

If these plans are just dropped in some agency lap and there is not continuance commitment to the planning process then these documents will be lost to obscurity relatively quickly. Hence all the more reason to involve the CZM Managers at the highest levels, as this can provide a vehicle for continued planning and development.

(8)

One last suggestion before turning to the specifics of the Narragansett Bay Project, is before any new estuary programs become operational, we think it is imperative that the program people attached to these projects come to areas like Narragansett Bay and spend time not only finding out what we did right as part of our estuary program, but, also what we would do differently if we had our time back.

NARRAGANSETT BAY PROJECT

The Narragansett Bay Project is probably the most ambitious program in the nation. The scope of work before us touches on every major problem facing our estuaries today. Only time will tell if this broad spectrum of issues will get adequate treatment so that a meaningful plan and results can come about. There is always the risk, in undertakings such as this, of diluting ones efforts so that each of these problems only gets superficial treatment.

Related to this, is getting adequate input from regulatory agencies so that the proper management questions get asked and answered. In a recent report to the states Environmental Quality Commission, on a review of state regulatory agencies, it was noted by the consultant in their Draft Final Report that there is a policy and planning vacuum in the Department of Environmental Management. With regard to the Bay Project, it was noted "The Narragansett Bay Program estuary - related management plans are being developed with

little or no policy direction or planning input from the three DEM regulator divisions." This input is not optional, it is absolutely necessary.

In addition to having proper regulatory input, it is also important to have all stakeholders sitting down at the table so that they will "buy into" the process. In some areas this isn't happening. In fact, attendance in general is a problem that must be dealt with. Sustaining interest and commitment over a five year period is a difficult matter and one that we are having to come to grips with.

This "buy in" from interested and affected parties is probably going to be the most crucial element to the success of the Narragansett Bay Project. Without it, it will become just another planning study.

In summary, the National Estuarian Program and the Bay Project are well underway and while the results are still forthcoming, the Council thinks it is not to early to take stock and learn from the lessons that are out there. There is still must work to be done, some adjustment to be made and the hard choices and work that successful implementation takes still yet to come. The concept behind the NEP is a solid one and we will work hard to see our part through. We look forward to the challenge and I thank you for the invitation to present these ideas.

GJF/jmm

SAVE THE BAY

ORAL TESTIMONY OF SAVE THE BAY
BEFORE THE SUBCOMMITTEE ON OVERSIGHT
OF THE COMMITTEE ON MERCHANT MARINE AND FISHERIES

JULY 31, 1989

Good morning, my name is Trudy Coxe. I'm executive director of Save The Bay, southeastern New England's largest environmental organization. On behalf of our 12,000 members, thank you for this opportunity to testify.

As the Narragansett Bay Project is replicated around the country, a move we heartily endorse, the opportunity exists for each new project to build on the experience of its predecessors. Toward this end, Save The Bay has submitted detailed written testimony recommending improvements to the National Estuary Program. These suggestions necessarily highlight the shortcomings of our own Narragansett Bay Project in order that others gain from our experiences.

We do not mean to imply that the Narragansett Bay Project is in any way a failure. Taken as a whole, it is our best opportunity ever to put together the partnership required to restore and preserve the health of Narragansett Bay. For the first time, Narragansett Bay has had a professional staff <u>in government</u> whose sole function is to monitor the Bay's health and improve its management. Save The Bay's own long range plan has been heavily influenced by

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Project science which showed that the Blackstone River is the second largest source of toxic pollution to Narragansett Bay. This, in combination with data showing that portions of Mount Hope Bay may be clean enough for shellfishing, led Save The Bay to develop a Massachusetts Program this year.

However, collection and synthesis of data is a relatively trivial task in comparison to building a management plan for the Bay, a task we are just beginning. Under Congressional mandate, the Narragansett Bay Project must within one year produce a Comprehensive Conservation Management Plan to convert our concerns for the Bay into specific tasks for federal, state, and local legislators and agencies. All our work over the last four years is in preparation for the greatest challenge of the Narragansett Bay Project: answering the question "so what." So what if there are toxics in the Providence River? So what if human waste from combined sewer overflows threatens shellfish? This information must be translated into strategies for Bay clean-up. Here, science must interact with law, public perception, and politics.

The task is far from easy. Consider the Narragansett Bay Project's studies of fecal contamination in the Bay. Though a great deal of money has been invested in raising questions about pathogens in shellfish, the ultimate management question is whether to move a shellfish closure line North or South. To move the line North, Rhode Island must work within federal Food and Drug Administration

guidelines which all but dictate procedures. Valid scientific questions of public health, the validity of indicator organisms, and comparative risk are simply inapplicable. On the other hand, moving the line South would be politically herculean, and require far more supporting data than the Project was ever willing to pay for.

In answering "so what," we must involve the public and government agencies. Since Rhode Island's coastal resources management program will presumably require alteration to meet Project goals, it is important that the Coastal Resources Management Council understand the Project and its significance. Since Massachusetts sources of pollution are very serious threats to the Bay, the Commonwealth should play a larger role in the Project, particularly since Congress mandates that the Governors of both states sign the resulting management plan. Massachusetts' continued failure to sign the Project's designation declaration may be a harbinger of future impediments to interstate cooperation.

In the long-term, Narragansett Bay is going to need more than a good plan. It will need a strong office to ensure implementation of this plan and future Bay protection initiatives. The Bay Project cannot be allowed to die after five years work. Save The Bay believes that a Narragansett Bay office with necessary staffing should be created and located in the Governor's office. From this position, the Bay Project would be able to work with federal, state, and local agencies and lawmakers as well as universities. With

the support of the Governor, the Project would be able to critically examine state activities and articulate overriding goals for the Bay. This office, and one in the Massachusetts governor's office, would ensure that milestones established by the plan are met, and would annually report to the public on our progress.

The State of Rhode Island and the Commonwealth of Massachusetts must commit to an adequate trust or revolving fund to finance implementing the CCMP. Also, the Federal government should recognize the public's overwhelming support for clean estuaries and institute a matching grants program specifically to support construction or other activities designed to restore and preserve the health of our bays and harbors.

Save The Bay, like others here today, has worked long and hard on the Bay Project and has a great deal to show for the effort. We have learned that the Blackstone River is the second largest source of toxics to Narragansett Bay. We have learned that combined sewer overflows dump billions of gallons of polluted water into the Bay each year.

But that knowledge leaves us all with a profound responsibility to act. A responsibility to see that this information is used. We have spent far too much time and money on the Narragansett Bay Project to let it end as an academic exercise. It is far more important to solve one problem than describe ten.

Thank you.

A COMMITMENT FROM RECREATIONAL BOATING

for a

CLEAN NARRAGANSETT BAY

Prepared for the Special Congressional Field Hearing of the Committee on Merchant Marine and Fisheries of the United States Congress. Scheduled for July 31, 1989 in Newport, Rhode Island.

Presented by:

Mrs. Holly A Desrosiers
Executive Director
Rhode Island Marine Trade Association

Management Committee Member
The Narragansett Bay Project

Secretary/ Treasurer
National Marine Trade Association

Member
Rhode Island Boating Council

Member
New England Marine Trade Association

Member
National Marine Manufacturers Association

Co-Chairman 1988
East Greenwich Harbor Management Commission

Submitted July 26, 1989

RHODE ISLAND MARINE TRADE ASSOCIATION represents over 200 marine businesses. Many concerns come to mind when the recreational boating industry looks at the quality of our Bay. R.I.M.T.A. places boat sewerage disposal at the top of its list. The boating industry contributes only a very minute portion of effluent in the Bay, but is very concerned over any amount that finds its way to the Bay. It has been estimated that one discharge from the Providence Sewer Treatment Facility would equal the entire year of boat sewerage effluent. We are not challenging to what degree boating pollutes, but are looking for answers to eliminate all pollution.

Last month Rhode Island Marine Trade Association participated with the University of Rhode Island/ Sea Grant Program in a seminar on pump-out facilities. Some of the following actions resulted from that seminar. Information from the Narragansett Bay Project studies proved very helpful in presenting the facts.

Presently marinas are installing pump out facilities where needed, and are charging prices that will encourage usage. The marinas feel that this service should be an asset to their customers. They are also studying the best methods of location to add convenience, which will encourage boaters to use the facilities often. We are looking into fixed systems, and portable systems for the marina pump out, as well as barge methods of pump out to service mooring areas. Some disposal problems are presently being addressed. Such as, acceptance of the affluent by town sewerage plants as well as the fact that

some marinas are not connected to sewer lines. Presently, these problems are being worked out with individual cities and towns. RIMTA is very concerned that boating effluent does not find itself returning to the Bay via the treatment plants!

RIMTA agrees that new marina construction plans should include provisions for boat sewerage disposal. We would like to encourage the Department of Environmental Management , to install courtesy pump out service at state facilities. We also suggest, that the new harbor plans that are presently being submitted by cities and towns to Coastal Resource Management, should include shoreside toilet facilities and trash containers at municipal docks, ramps, and parking areas. We are encouraging our marinas to provide clean and easily accessible shoreside toilet facilities for their customers. We also recommend that the state pump out facility at Fort Adams State Park in Newport be activated and publicized immediately for use.

In other avenues of support for a clean Narragansett Bay , RIMTA discourages the use of styrofoam and plastic products onboard and onshore. RIMTA agrees that items such as six pack rings, styrofoam cups and plastic bags endanger wildlife and the quality of the Bay. We are increasing public awareness as to the importance of proper disposal of trash, oil, and batteries, as well as the proper use of marine chemicals, through education. We hope that the state will support our efforts by instituting educational public service announcements on local

media. We hope that the Narragansett Bay Project education committee has plans to publish education booklets on these subjects. One local television station is doing an excellent job of educating the general public through a program called "Have A Nice Bay". We need more of this type of awareness programs. They are informing the public of what pollutes and how they are polluting the Bay. Yacht Clubs in Rhode Island are responding to the Bay needs by educating their members via newsletters. The results are very encouraging. The boating public is very cooperative in following through with suggestions on eliminating pollution, but we have to open up avenues for them to acquire update information.

RIMTA would like to convey the fact that a greater cleansing action in the estuaries could be created by increasing the flow in the harbors and marinas through dredging. Dredging would create deeper channels with greater flushing action; therefore creating cleaner harbors and cleansing of the shellfish beds at the same time.

Recreational facilities are self disciplining themselves in waterfront cleanup in marinas and adjacent shoreline. It is gratifying to see local community trash bashes being created. The Narragansett Bay Project has been very helpful in pointing out ways to eliminate possible pollution from the recreational boating industry. Caroline Karp , project manager, appeared before RIMTA and presented a different view of the Bay than we had seen before. Information that the Bay Project has founded

from studies is now being projected into everyday planning and new ideas. I value my opportunity to be the voice of recreational boating for Rhode Island by serving on the management committee. This allows us direct input to the Bay Project's concepts and offers a chance for us to air our views, ideas, differences, and concerns early in the program. It was an excellent idea to have representation from the user groups on their committees.

Pursuing and establishing an equitable water quality formula with true values should also be a top priority. A formula representing true facts and common sense would make for an amicable co-existence between boaters and shellfisherman. Recreational boating and commercial shellfishing share equal interests and needed use of the Bay. Both industries should be treated equally in decision making. Recreational boating contributes a great economic impact to the state of Rhode Island. The state should encourage the growth of Rhode Island's marine industry. Marinas provide access to the Bay for many thousands of boating families. In fact one third of Rhode Island's population goes boating every year. Boating is the number two use of all coastal waters. Swimming is number one. We need the Narragansett Bay Project studies to guide boaters to use it wisely. The studies produced by the Bay Project will prove vital to the proper management of the Bay in the future. The Bay belongs to everyone and all user groups have to enhance each other, and work together to make OUR BAY A CLEAN BAY for EVERYONE.

*RIMTA is presently reviewing BILL H.R. 2647. We only recieved this information yesterday and would like to comment on it at a later date after our review.

Testimony of

MARA CHERKASKY

Senior Staff Associate

RHODE ISLAND LEAGUE OF CITIES AND TOWNS

before the

Subcommittee on Oversight and Investigations

House Committee on Merchant Marine and Fisheries

July 31, 1989
Newport, Rhode Island

Mr. Chairman, Members of the Subcommittee:

I am here today to discuss, from the municipal perspective, the Narragansett Bay Project. I appreciate very much the opportunity to appear before you, and I thank the subcommittee members for any role they have had in making the Bay Project possible.

Among Rhode Islanders, it is generally agreed that Narragansett Bay is the most important resource of any type that the state has. It is an important part of our culture. Where George Washington threw a silver dollar across the Potomac, Roger Williams rowed up and down Narragansett Bay. Our state shellfish, the quahog, is something we enjoy eating. Our (unofficial) state cartoonist draws much of his inspiration from the Bay. We draw much of our wealth from the Bay. Tourists are drawn to the Bay.

The Bay's health is very important to us, and the Narragansett Bay Project's purpose is to ask: how do we manage this? how do we manage coastal waters? It will give us the answers next year.

Of course, we can already guess at some of the answers: stop the flow of sewage into the streams and the bay, manage growth along waterways, abate non-point sources through better land management practices, and so on.

Over one third of the municipalities border Narragansett Bay. A number of others are connected by rivers, and all are in close proximity in a state this small. In general, wastewater treatment is a local function; zoning and land use regulation are local functions.

It is therefore likely that the kind of water quality improvement measures the NBP proposes next year will be directed toward cities and towns: capital improvements to wastewater treatment facilities, new land management practices, more stringent ISDS management, more careful planning. None of this will come as a shock. Cities and towns are already struggling over how to finance wastewater treatment that is mandated under the Clean Water Act, and what to do with the resulting sludge, how to pay for CSO studies, not to mention CSO abatement.

A preliminary study by Smith, Barney and others for the Rhode Island Department of Environmental Management gives us the news that all the required abatement measures will cost us -- municipalities -- about $1.4 billion over the next fifteen years. This will cover rehabilitating wastewater treatment plants, building or rehabbing sewers, abating CSOs and nonpoint sources and other water/wastewater projects.

Another study, sponsored by the Narragansett Bay Project and carried out by the environmental consulting group Apogee, Inc., evaluates funding mechanisms, describes their shortfalls, and prescribes the best means of using what funds are available to the greatest effect. Apogee will also undertake demonstration projects and prepare analyses of specific financing strategies that can be applied to high priority problems.

The Rhode Island General Assembly earlier this month passed legislation to establish a revolving loan fund (as directed by the Clean Water Act). But we're talking here about loans, not grants. How will the money be paid back? The federal government has cut out the construction grant program and is only

making limited capitalization grants to the states for loan funds. The state is barely in a position to come up with the matching dollars for the loan fund, much less make up for the lost federal dollars. In the end, the burden falls on local governments, which have the most limited means -- in Rhode Island municipalities must rely very heavily on the property tax -- and no place to pass the buck.

So while the federal government is willing to bail out savings and loans institutions that have been sapped by the greed of a few, it does not seem willing to bail out what is in effect the nation's life blood -- the waters-- that have been used and abused by all of us over the years. The cities and towns will naturally do what they can, but what they can do is very limited and very piecemeal. This is an issue of fundamental concern and therefore warrants more support by our federal government.

In Europe, Sweden, which is open-eyed enough to see what is happening, is lending financial support to Poland, a foreign country, for pollution control; both border the Baltic Sea, and both depend on its health. Here in the United States, we seem to have different priorities than the health of our air, water, land (and people).

Legislation introduced by Representative Studds entitled the Coastal Defense Initiative of 1989, if passed, would go a long way toward setting us on the right track, including providing technical assistance and funding for state and local coastal programs and demanding more stringent discharge requirements and more stringent land management.

Obviously, changing land management practices is extremely important if we want to clean up the Bay and our other waters.

That is why the Land Management Project, established in 1988 as a sister organization -- the more extroverted sister -- to the NBP, is so important. It is the LMP that works with the cities and towns; its professed purpose is to demonstrate the effects of land use on water quality and to assist communities in their efforts to manage nonpoint source pollution in concert with their efforts to manage nonpoint source pollution in concert with their efforts toward related planning goals. It is doing this by working with local and state agencies, private firms, agricultural operators, and interest groups to sponsor the development of demonstration projects illustrating specific approaches to the management of nonpoint source pollution. It responds to cities' and towns' requests for technical information or for interpretation of scientific data from other sources. It is developing fact sheets, data matrices and other educational tools. It is also holding workshops on technical and planning aspects of growth management and nonpoint source management. It prepares model ordinances relating to nonpoint source control, assists in evaluating costs and benefits of various approaches and potential financing mechanisms, provides referrals, and condenses scientific and engineering materials for the use of local decision-makers. In general, it acts as a consultant to cities and towns, free of charge.

The Land Management Project will work with the communities in the local comprehensive planning process. Comprehensive plans were mandated by the state legislature in 1988 and are to be completed by the end of next year. The League, in fact, and the Project will be collaborating during the

remainder of the summer on a newsletter of information on comprehensive planning requirements and techniques.

Examples of how the Project is working with cities and towns are as follows: In North Kingstown, East Greenwich, and Warwick it has been assisting in an aquifer and surface water protection program in the Hunt-Potowomut watershed. According to the North Kingstown planner, Marilyn Cohen, the assistance offered by LMP director Jennie Myers has been invaluable. For example, she provided information on how a regional group can be organized to work effectively. She also provided "another voice" with a natural resources perspective and has been a helpful hand in dealing with state agencies. "A new voice is heard more loudly," Marilyn Cohen says. "The Land Management Project has been able to pull everything together for us."

In the Town of Smithfield, the LMP has been providing technical assistance to help the town protect its vulnerable freshwater ponds by regulating nutrient inputs, through the subdivision ordinance. On Aquidneck Island where three communities share highly vulnerable water resources, LMP staff member Jed Merrow has been working with conservation commissions on protection techniques and is helping the communities establish a citizens monitoring program.

The type of focused technical assistance the LMP is providing is extremely valuable to cities and towns. Unfortunately, though, because of financial constraints, the staff is extremely limited. Sadly, also, the Project is due to expire in a little over a year. A lengthened life and greater support for the LMP, especially as we begin to implement

recommendations of the Narragansett Bay Project, are greatly needed.

We appreciate very much the federal government's recognition of Narragansett Bay as an estuary of national significance and its inclusion of the Bay in the National Estuary Program. My point is that it will be important to carry out the recommendations of the Bay Project and, as we move beyond the planning stages, federal support - financial and technical - will catalyze efforts at the state and local levels to improve the quality of the Bay and all our nation's waters.